the OIL AND GAS JOURNAL

Rates: Domestic, 1 year, $6.00; 6 months, $3.00. Canadian and foreign, 1 year, $7.00; 6 months, $3.50. All subscriptions are payable in advance

VOL. 35, NO. 48
APRIL 15, 1937

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

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California's April Output to Be Reduced

DEVELOPMENTS the first of the week indicated that crude oil production would be reduced in at least two states in the second half of April. With all but one of the principal oil states producing in excess of state allowables and national production more than 200,000 barrels daily in excess of Bureau of Mines recommendation, many observers feel that reduced output over the remainder of the month will be helpful to both crude oil and refinery markets.

The high rate of well completions, which is running 22 per cent ahead of last year and which if continued over the remainder of the year will approximately equal the record of 1926, is being reflected at a few points in a demand for more outlets. While there is no sign of general weakness, reports in the Mid-Continent and California indicate that more "free" crude is available than at any previous time this year. The quantities involved are not large and in some cases are temporary offerings, but the fact that buyers have not taken on the additional connections available indicates that the current supply is in excess of immediate needs.

In California, with production jumping to 625,000 barrels daily last week, the Central Committee of California Producers has reduced the April allowable to 580,000 barrels, and it is hoped the actual production can be brought under 600,000 barrels daily, which is in line with current demand. Oklahoma production continues 20,000 to 25,000 barrels above the state allowable, with reports indicating that some of the operators who stepped up their production, have had difficulty finding needed additional outlets. A reduced output over the remainder of the month is expected. Texas output will also have to be reduced over the next 15 days if the April allowable program of crude oil production is to be carried out.

Production 3,425,853

Decrease 2,593

The Bureau of Mines report giving detailed data on crude producing and refinery operations for February, released the first of the week, shows a healthier balance between supply and demand than was apparent in the January report. The total demand for all the principal refinery products with the exception of kerosene was ahead of 1936 for the first two months with a gain of 11.7 per cent for gasoline, 5 per cent for fuel oils and gas oils and 16.9 per cent for lubricating oils. Outstanding in the reports for the first two months is the increase of nearly 16 per cent in shipments of crude oil and refinery products to foreign buyers.

A new field in Kern County, California; further indications that the new pool in Union County, Arkansas, will prove of major importance; a promising wildcat development south of the Cromwell field in Oklahoma, and a new pool in Jackson County, Texas, were outstanding field developments.

Daily Average Production for Week

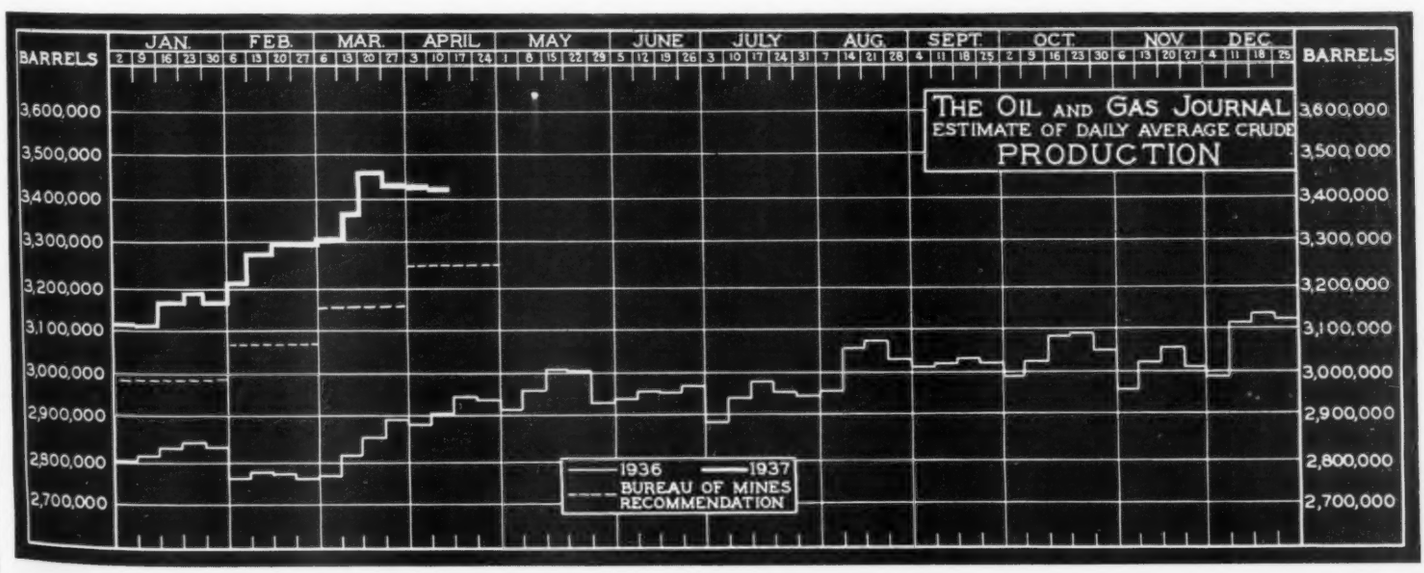
	Apr. 10, 1937	Bur. Mines Apr. est.	Apr. State allowable	Apr. 3, 1937
Oklahoma City	165,425	.....	.....	164,400
Seminole-St. Louis	89,125	.....	.....	89,000
Remainder of State	387,075	.....	.....	395,325
Total Oklahoma	641,625	609,600	620,460	648,725
East Texas	460,697	.....	.....	460,250
West Texas	199,346	.....	.....	208,297
North Central Texas	104,349	.....	.....	101,449
Texas Panhandle	64,797	.....	.....	75,248
East Central Texas	119,098	.....	.....	123,450
Gulf Coast—Texas	324,598	.....	.....	332,045
Southwest Texas	101,900	.....	.....	101,050
Total Texas	1,374,785	1,297,900	1,348,964	1,401,789
North Louisiana	71,235	.....	.....	71,645
Gulf Coast—Louisiana	175,100	.....	.....	174,400
Total Louisiana	246,335	244,800	235,675	246,045
Santa Fe Springs	45,000	.....	.....	44,500
Long Beach	61,000	.....	.....	60,750
Kettleman Hills	78,000	.....	.....	75,500
Remainder of State	441,000	.....	.....	404,500
Total California	625,000	579,900	*580,000	585,250
Kansas	178,775	183,000	190,300	189,175
Arkansas	27,540	27,400	.....	27,440
Eastern Fields	115,800	115,000	.....	115,100
Michigan	41,163	30,600	.....	40,112
Southeastern New Mexico	105,370	90,440	102,155	103,580
Rocky Mountain area	69,460	64,360	.....	71,230
Total United States	3,425,853	3,243,000	.....	3,428,446

*Recommendation of Central Committee of California Oil Producers.

Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATES)

Week ending March 27, 1937	293,587,000
Week ending March 20, 1937	291,555,000
Week ending March 29, 1936	312,959,000



Texas-Louisiana
Is Preparing for

By NEIL WILLIAMS

Drilling side by side in Lake Barre field

HOUSTON, Tex.—From the standpoint of widespread exploration and development of additional petroleum reserves, expansion of refining facilities, and increases in volume of crude and oil products handled through its extensive tank farm and loading terminal systems, the Gulf Coast experienced one of its most constructive periods during the first quarter of the year.

With maintenance of the rate of discoveries during the past three months, with the carrying out of the extensive refinery construction program under way or definitely contemplated, and continuation of the greater volume of oil cleared through the district, there is no doubt 1937 will materially strengthen the position of the Gulf Coast in the industry.

Considering additions to petroleum reserves, 10 fields were opened on the Gulf Coast during the first quarter. These do not include a half dozen or more areas in which the existence of new fields was indicated either by major blowouts or other conclusive showings of oil or gas in wildcat tests. Neither do they include at least two fields which were restored to production in new horizons after having been inactive for several years.

In regard to refinery building and expansion, major construction programs have been under way by 11 different companies during the past three months. These include a new 5,000-bbl. plant to be built by Barnsdall Refining Co. at Corpus Christi, on which construction has not actually been started but for which definite preparations have been made. The list, however, does not include various other contemplated projects.

The unprecedented consumption of petroleum has placed increasing demand for oil to be moved in the Gulf Coast's storage and refining concentration centers for coastwise and export shipping, water shipments showing substantial gains.

Fields opened during the first three months included seven on the Texas Coast and three on the Louisiana Coast. Although none has received sufficient development to indicate its extent, several have earmarks of becoming of major importance. Altogether, during 1936, a total of 36 fields was opened in the district compared with 10 already brought in during 1937.

Coastal Louisiana's contributions this year include Bayou Cocotriz, Terrebonne Parish; South Roanoke, Jefferson Davis Parish, and Abbeville, Vermilion Parish. Of these Bayou Cocotriz has made the most favorable introduction. Its discovery well, Shell Petroleum Corp. No. 1-B Realty, 18 miles northeast of Morgan City, flowed at the rate of 873 bbls. daily on an initial test through a quarter-inch choke, and recorded pressures of 1,700 pounds on the tubing and 1,800 pounds on the casing. Production is from a sand at 9,493 feet. Barnsdall Oil Co. is a joint owner with Shell in the block.

Shell Petroleum Corp. also opened the South Roanoke field, about 8 miles southwest of Jennings. The discovery well so far has made only wet gas, but such wells usually lead the way to development of oil production. This test originally drilled to 9,749 feet where it tried to blowout, sticking the drill pipe. It then was plugged to its present horizon where casing was perforated at 8,540-50 feet.

The Abbeville discovery well was Continental Oil Co. No. 1 Hebert, drilled to 12,216 feet as the second deepest test in the world. Production, however, is through casing perforations at 7,666-75 feet, with the well making between 25 and 50 bbls. daily. Its commercial importance is uncertain so far, but the presence of a good field generally is assumed. Gulf Oil Corp. is a joint owner in this area.

On the Texas Coast, discoveries included Bammell, north of Houston, Harris County; Palacios, southwestern Matagarda County; Labelle, Jefferson County; Sandy Point, western Brazoria County; Sweden, 6 miles southeast of Benavides, eastern Duval County; London, 12 miles southwest of Corpus Christi, Nueces County, and Chapman, 2 miles south of the London field. Although close to the London field, Chapman is regarded as a separate pool, with production from a sand at 6,460 feet compared with the 4,700-foot producing horizon of the discovery well of the London field. Only one well has been completed in each pool.

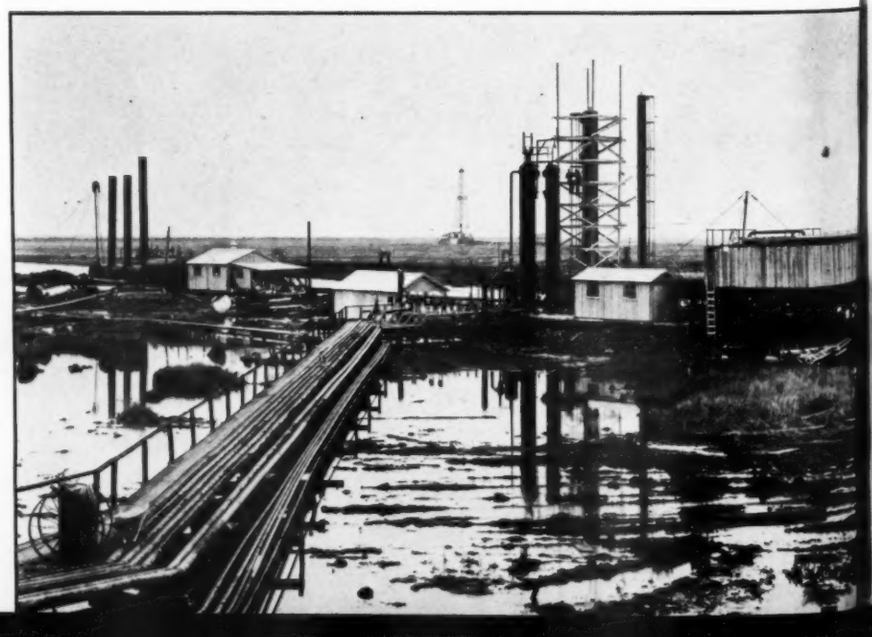
In the Sweden field, owned and controlled by Hiawatha Oil Co. (Benedum & Trees), two wells have been completed, both in a 5,850-foot sand believed to be the equivalent in the lower Gulf Coast of the Conroe sand of the Cockfield. This field has established the first deep production in that particular county. The field is expected to be of major extent.

New sands were opened in various fields, most interesting of which were the 10,000-foot horizons found productive at Lafitte, Jefferson Parish, Louisiana, and at Old Ocean, Brazoria County, Texas. These sands established the first 10,000-foot production on the Gulf Coast. At South Bay City, Matagorda County, an 8,200-foot sand was opened for production in the second test drilled in this field, brought in during 1936. The discovery well is producing from a 9,300-9,400-foot sand. Two new sands, one at 6,700 feet and one at 6,900 feet, both in the Frio, were opened at Saxet, Nueces County.

Field development during the first quarter also resulted in the proving of three salt domes, two in Coastal Louisiana, and one just over the line from Louisiana in Lamar County, Mississippi. The Louisiana domes included Marchland, southern Lafourche Parish, and Henderson, north of St. Martinsville, St. Martin Parish. The Mississippi dome is the first known salt dome in that state, and presages a renewed leasing and wildcatting play through the coast district of that state, so far unproductive of oil.

Refinery construction projects are widespread over the Gulf Coast in a continuation of the almost general plant modernization and expansion pro-

Combination high-pressure and low-pressure gasoline plant being constructed by Tex Co. in the Lafitte field Jefferson Parish, Coastal Louisiana



Coastal Area Great Demand

Drilling activity growing in newly discovered McCampbell field, Southwest Texas

gram which has been under way for several years. This year has witnessed no letup in this building. The construction programs of greatest size are found in the Houston-Texas City and the Sabine districts of Coastal Texas with major additions of varied types to existing refineries, and completion of one new plant.

Circulation is expected to begin late this month at Atlantic Refining Co.'s new plant at Atreco on the Sabine channel between Beaumont and Port Arthur. This plant, equipped with cracking capacity and a polymerization unit, is capable of processing 18,000 bbls. of crude daily.

A few miles up the Neches River from Atreco, Pure Oil Co. has just placed on stream a new 14,000-bbl. combination unit, completing a $1,000,000 building and expansion project. Previously, the company put in operation a new 10,000-bbl. crude distillation unit.

Other Gulf Coast editorial material, comprising over 50 pages, continues in a special section starting on page 79

At Port Arthur, Texas Co. is adding a 15,000-bbl. crude distillation unit to its 100,000-bbl. refinery. Foundations are completed and steel work is taking shape.

Gulf Oil Corp., also at Port Arthur, has just placed in operation a 1,000-bbl. lube rerun unit and is starting construction of a 3,000-bbl. vacuum lube plant. Plans are drawn up for the addition of an iso-octane plant. A hydrogenation unit which will convert isobutylene to iso-octane also is contemplated. This unit will have a capacity of 2,000 bbls. of raw stock daily.

The Houston-Texas City district is the scene of three large-scale projects. At Texas City, Pan American Refining Corp. recently placed in line a combination unit with a capacity of 30,000 bbls., making the second unit of its kind and size at the plant. A third combination unit, to have a capacity of 18,000 bbls. daily, is under construction. Coincident with completion of the new combination unit, a catalytic polymerization plant also was placed in operation, the largest of its kind in existence.

The largest diversified program of construction is taking place at Shell Petroleum Corp.'s Houston plant. The power plant is being enlarged by addition of two Vogt high-pressure boilers. A combination unit capable of topping 16,000 bbls. of crude, cracking 11,000 bbls. and reforming 5,000 bbls. of crude fractions daily also is under construction. More than 2,000,000 bbls. of storage has been added to the refinery's adjacent tank farm, and a new oil dock has been added to the terminal.

Humble Oil & Refining Co. has let contracts for an atmospheric and vacuum crude distillation unit capable of processing 18,000 bbls. of crude daily as an addition to its 125,000-bbl. refinery at Baytown. A polymerization unit also is under construction. This unit is the final phase of a project started last year involving enlargement of natural gasoline plant facilities and sources in the East Texas field, and laying of an 8-inch line to Baytown for transportation of natural gasoline. Natural gasolines and light fractions will be piped to Baytown where the lighter ends will be fractionated and used as charging stock for the polymerization unit.

At Baton Rouge, La., Standard Oil Co. of Louisiana is planning extensive improvements to its 90,000-bbl. plant. Chalmette Petroleum Corp. has just placed on stream a 9,000-bbl. cracking unit at its New Orleans plant. Barnsdall Refining Co. plans construction of a refinery at Corpus Christi to include a 5,000-bbl. Dubbs cracking unit. Wood-Moore Co. is completing plans for doubling its 1,000-bbl. skimming plant at Port Lavaca.

Lake Barre field, Terrebonne Parish, Coastal Louisiana

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by THE PETROLEUM PUBLISHING COMPANY at Tulsa, Oklahoma

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An Appeal to Reason

The chaotic condition of the world today is largely the result of whole peoples being gulled by emotion rather than being guided by reason. Whatever form the virus takes, racial, nationalistic or social, the dementia runs its course. Those affected surrender all sense of reality in infatuated pursuit of their special will-o-the-wisp.

The workers in the American petroleum industry should decide the unionization question by an appeal to reason rather than to their emotions. Labor organizations were primarily formed and have been kept alive to correct and prevent abuses and to remedy conditions which are not found in the oil industry.

The facts presented on the opposite page, taken from the official reports of the federal government Department of Labor, show conclusively that workers in the petroleum industry are paid better wages, work less hours and suffer no such seasonal lay-offs as found in other industries.

On that showing none of the causes for unionization is seen in the oil industry, a fact supported by the absence of any demand for it among oil workers until it was promoted from outside the industry.

The worker in the petroleum industry should stop, investigate and think before allowing himself to be swept into an emotional movement which can offer him only what he already has, better wages, less working hours and permanent employment.

The government figures show that the petroleum worker, in pay and working conditions, stands out above his fellows in other industries. He can compare for himself his own lot with that of others and the relationships between employes and employer in the oil industry.

What has unionization to offer him more than he has already except perhaps paying dues to maintain an organization he has done very well without.

If oil industry labor had felt there was need for unionization it would not have waited all this time until the present particular gospel was invented. Union rivalry, the need for recruits, rather than a need for the union, is responsible for the commotion.

It is for the individual oil worker to decide for himself whether he will sacrifice more by yielding to the emotional clamor of the moment than by holding fast to what his reason tells him is his best course.

Workers in the oil fields, the refineries and on the pipe lines, who are proud of their personal skill and experience which won them better jobs than other industries offer, will hardly consent to drop to the level of automatons in mass production.

Oil Industry Ranks First in Earnings of Employes

By C. O. WILLSON

Recent studies of industrial wage scales have shown that weekly earnings in the producing, refining and pipe line divisions of the oil industry are at the highest levels in its history.

These peak weekly earnings are not only greater in dollars and cents, coupled with a substantial reduction in hours of employment but measured in purchasing power, they represent "real wages" from 15 to 20 per cent higher than those of the boom period of 1929.

These facts, derived from the latest available reports of the Bureau of Labor statistics of the U. S. Department of Labor, reflect the unusually favorable conditions in regard to wage scales which, considered with other data, give the oil industry's principal divisions top rank among all major industries.

While the oil industry has always rated above the average in earnings of employes, the strong position is particularly significant at this time when the Committee for Industrial Organization (C.I.O.) is endeavoring to stir up discontent among workers with a nationwide plan to unionize the industry, its immediate objective. It is now apparent that employes generally are satisfied with the liberal treatment they have received from a large majority of managements and the plan to turn over future labor negotiations to outside union officials will not succeed unless considera tions other than actual employment conditions become the controlling factor in the union drive.

The latest government data, which do not take into consideration the advances in wage scales since the first of the year, show petroleum refining stands at the top of all manufacturing industries in hourly pay. Weekly earnings of refinery employes are exceeded by those of the transportation industry only, a situation accounted for by the fact that employes in the latter industry work 3.7 hours a week more than they do in the manufacturing end of the oil business.

The government reports at the start of this year reveal that the hourly pay of employes in petroleum refineries was 44 per cent greater than the average of all manufacturing industries, the number of hours employed per week 11 per cent less and weekly earnings 24 per cent greater. Based on 1923-1925 indexes, employment in petroleum refining was 119.5 compared with 98.1 for all industries. The refinery pay rolls were 119.5 of the 1923-1925 level while the average of all industries was 95.1.

Among the nonmanufacturing industries the position of the crude petroleum division, which includes producing operations and drilling, is equally impressive. The hourly wage was slightly less than in the case of refining and the hours per week about 10 per cent more but weekly earnings are substantially in excess of average conditions and not equaled in any industry whose operations are comparable.

Government Data

The comparative data summarized in the accompanying chart which shows graphically the position of the refining and producing branches compared with average conditions in other industries, were obtained from the March issue of the Monthly Labor Review compiled by the Bureau of Labor statistics of the U. S. Department of Labor. In a section showing trend of employment and payrolls detailed information based on December operations of 89 manufacturing and 16 nonmanufacturing industries is given.

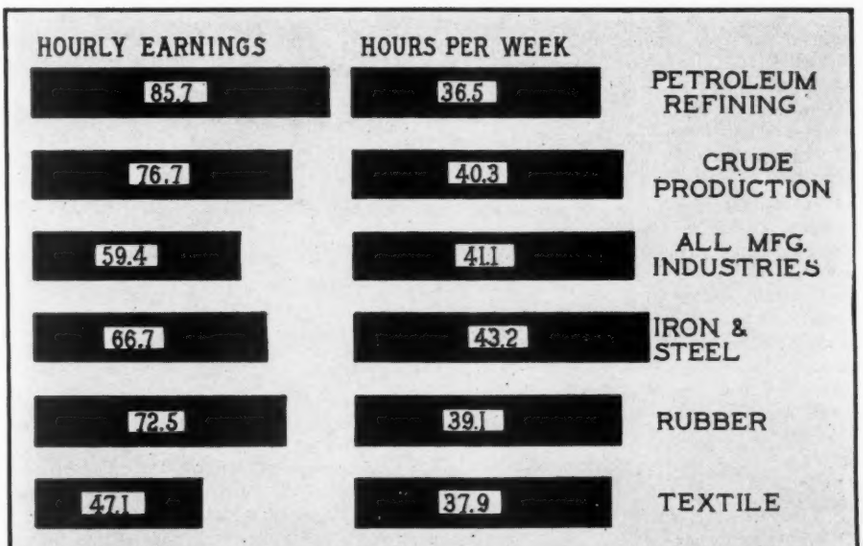
The data covered in the report cover employment and payroll conditions for December, 1936, in relation to indexes of 100 based on 1923-1925 operations. The weekly earnings for December are tabulated as are the "average hours worked per week" and "average hourly earnings." For comparative purposes the same data are given for November, 1936, and December, 1935.

These monthly reports over the past few years have revealed that petroleum refining in the manufacturing group and crude producing in the nonmanufacturing division have steadily strengthened their position among all employers of labor. The oil industry was among the first to reduce hours of employment and increase wage scales under the NRA program inaugurated in 1933. Carrying out the government's objective of widening employment, a report compiled by the Department of Labor showed that May, 1933, to July, 1934, average hours of employment per week were reduced as follows: Drilling and production, from 51 hours to 34 hours; pipe lines, 50 hours to 35 hours; refining, 49 hours to 35 hours. Indexes of employment for the two months jumped 61 per cent in the case of drilling and production, 33.9 per cent for pipe lines and 22.4 per cent in the refining divisions. During this 14-month period 170,000 workers were reabsorbed by the three divisions.

In further cooperation with the government's plan of returning men to work the oil company managements generally increased hourly wage scales so that what was lost by the employe through reduced number of hours in weekly employment was largely offset by the higher hourly scales. This trend did not end, as in the case of several industries, with demise of the NRA brought about by an unfavorable Supreme Court decision in 1935. In the refining end most companies continued the 36-hour week and as shown in the latest reports they have increased hourly wage scales. In the producing end hours of employment were increased at the request of employes in most cases. A number of companies, however, continued the NRA scales without any changes until the hourly advances were made effective over the past year.

In consequence of this trend, hourly wage scales in the refining and producing divisions have been advanced so that a refinery employe in December last year, working an average of 36.5 hours a week, was getting practically the same weekly earnings that he was in 1929 working 49 hours. The same situation existed in the producing end, with weekly hours of employment reduced from 51 to 39.5. Since the close of December most companies have made one, and in some cases two, general advances

Employment Conditions in Petroleum Refining and Crude Producing Compared to Other Representative Industries



Data from March, 1937, Monthly Labor Review published by U. S. Department of Labor covering conditions in December, 1936. Earnings in cents per hour

in hourly wage scales with no increase in hours per week. This means that today the weekly earnings have advanced to the point where they are in excess of the 1929 levels.

Greater Purchasing Power

This increase in hourly rates with decreased number of hours so that employes are now receiving peak weekly pay checks is only part of the comparison covering present conditions and those of the boom labor period which ended in 1929. The Department of Labor not only is interested in payroll trends and hours of employment, but it also concerns itself with timely data on cost of living. This phase of the department's statistical work makes it possible to determine changes in the buying power of the workmen's dollar.

The March Labor Review, previously quoted in regard to trends in employment, shows that the December index covering cost of living was 82.4, the same as in September. The average costs in 1923-1925 were used as 100. Compared with January 15, 1936, the index shows a gain of 1.3 for the 11 months. The December index was 10.6 per cent above the low point of June, 1933. The review states average living costs in December, 1936, were 17.3 per cent lower than in December, 1929.

The index on living costs takes into consideration the costs of food, clothing, rent, fuel and light, household furnishings and miscellaneous items. Taking 1913 as 100 the index of cost of goods purchased by wage earners and lower-salaried workers in 32 large cities combined reached an all-time high of 221.3 in June, 1920; averaged 181.3 in December, 1925; dropped to 129.8 in June, 1933, and had increased to 143.6 by December 15, 1936. There has been a slight increase since that time.

A study of these reports substantiates the statement that wage increases made effective by the oil industry since 1933 have been greater than the increase in the cost of living.

Gratuities

Data on wage scales and purchasing power of earnings still do not give a complete picture of employment conditions in the oil industry. Partial reports including those made by government bureaus prove that the oil industry occupies an enviable position among major industries in the matter of supplementary provisions which have to do with the well-being of employes over a period of years. These include annuities, pensions, bonuses, profit-sharing, insurance, stock purchase plans, vacations on pay, educational and recreational facilities, low cost housing and public utilities and other provisions which in effect add to payrolls of all employes. Unfortunately no data are available totaling the expenditures for these additional gratuities which are of major significance to the permanent employes.

Finally there is the matter of seasonal unemployment. In most industries yearly lay-offs for shop employes of a month or more are the rule in normal and even during boom periods. Obviously this situation reduces yearly income which in the ultimate analysis is the equitable basis for comparing earnings. In petroleum refining most employes have steady employment throughout the year. In many cases they are given vacations on pay, the same as office employes. The operating phases of the producing division are carried on for the most part, on the same basis.

Retail Operations

It will be noted that the government reports do not give monthly statistics pertaining to conditions in the marketing branch of the oil industry. Surveys were made during the NRA period, and the Bureau of Census before and since has collected information which covered working conditions in certain areas.

More persons are employed in oil marketing operations than in the producing, transportation and refining branches combined. Employment conditions in the sale of petroleum products except for part of the wholesale operations, are not a direct responsibility of the oil industry. Oil companies have practically withdrawn from retail station operations which account for a large part of the employment. One of the reasons for the withdrawal of companies from station operations was the fact that the company-owned units were forced to compete with dealer-owned facilities where wage scales were low with no restrictions in hours of employment. Labor conditions at stations have become a problem of the independent dealer with average conditions in the merchandizing branches of all industries the only fair basis of comparison. The investigations previously mentioned showed that wages at bulk and retail stations were generally higher than the average for marketing operations in other industries.

Rival Labor Unions Compete for Oil Industry Members

The widely heralded campaign of the International Association of Oil Field, Gas Well and Refinery Workers, backed by John L. Lewis' C.I.O. organization, to enroll more than half a million workers in all phases of the petroleum industry spread Monday to scattered points in every section of the oil country.

At the same time, American Federation of Labor representatives announced plans for a counter campaign for control of the industry, to begin with a mass meeting in Houston, Tex., Thursday night. This movement was to be started under direction of John P. Frey, president of the metal trades department of the A.F. of L., in an effort to line up the workers in craft unions, as opposed to C.I.O. industrial groups. R. L. Shoemake, president of the Houston local of the International Bridge, Ornamental and Structural Iron Workers, has been appointed A.F. of L. organizer in South Texas and was to begin enrolling workers immediately. This campaign, also, was due to be extended into all parts of the nation where oil workers are employed.

Oil company pay rolls soared to new records the past week, as several major companies, independent oil contractors and operators announced wage increases averaging up to 10 per cent. The increases affected pipe line, production and refinery workers. Increases or "adjustments" in pay have been announced by Humble Oil & Refining Co., Texas Co., Shell Petroleum Corp., Magnolia Petroleum Co., Sun Oil Co., Pure Oil Co., Stanolind Oil & Gas Co., Gulf Oil Corp., Stanolind Pipe Line Co., Sinclair Refining Co. and United Gas Co., among others. It was estimated the pay raises will aggregate $15,000,000. The treasurer of one major company was quoted as saying it was the plan to raise wages as the cost of living soared, and current increases were to offset higher costs that have developed in the last few months.

A meeting with executives of the Humble Oil & Refining Co. and announcement of a new objective for the oil workers union highlighted the actions of Harvey C. Fremming in Houston last week. The president of the International Association of Oil Field, Gas Well and Refinery Workers presided over several conferences held with other officers and representatives of the union's seven districts.

A new policy introduced and adopted by the union's council is expected to guide their action in the future. Fremming announced that the organization would plump for the fixing of a minimum yearly wage for oil workers. This introduces a new factor into the drive, since all wages are fixed by the hour, but immediate action was not anticipated by the union.

Mr. Fremming, together with Adolph Germer, C.I.O. organizer, and P. G. Wilson, local representative of the union, met with executives of Humble Oil & Refining Co. last week. Following the conference, the company issued a statement, reading in part:

"Pursuant to a request by President Harvey C. Fremming of the International Association of Oil Field, Gas Well and Refinery Workers, Harry C. Weiss (president), E. E. Townes (vice president and general counsel) and D. B. Harris (director of personnel) of the Humble company met with Mr. Fremming, P. G. Wilson of the Oil Workers Union and Adolph Germer of the C.I.O. this morning.

"After an informal discussion Mr. Weiss announced the company policy of long standing is unchanged and no change is now contemplated.

"This policy has heretofore been stated as follows: 'In the matter of collective bargaining the company will continue to be guided by the labor policies it has followed for many years. It will deal with any individuals and the representatives of any group or groups that its employes may choose to represent them.' "

Mr. Fremming stated the conference had been very satisfactory, and further representation of the union would be taken over locally by Mr. Wilson. He left Houston Thursday night for Wyoming, and Mr. Germer departed for Detroit, where he is actively associated with the auto workers activities. Both are expected to return to Houston within two weeks.

During the past week employes of Texas Co. in Port Arthur, Tex., were added to other working groups in the Gulf Coast area objecting to C.I.O. intervention. Workers of two local refineries joined employes of Texas Co. terminal and can plant in voicing objections to the movement in a mass meeting, held without company connections. Representatives of refinery employes of Globe Oil & Refining Co. at McPherson, Kans., Monday notified company officials they were satisfied with labor conditions and would not join any outside group without first consulting their employers.

Trial of nine striking employes of the Naph-Sol Refining Co., North Muskegon, Mich., charged with hurling missiles at company officials, following an outbreak of alleged violence near the plant last Saturday, was scheduled to begin in Muskegon municipal court this Thursday. The strikers, who claim the company has made no move to settle a dispute when they sought union recognition from Walter E. Anderson, company president, have appealed to a federal labor conciliator.

Discovery of New Horizon Stirs Activity in South Arkansas

By MITCHELL TUCKER

EL DORADO, Ark.—After testing for one week, Lion Oil Refining Co.'s recent oil discovery at Schuler, Ark., presents all indications of being a major discovery, and boom days have once more returned to South Arkansas. Informed men of this territory predict an extensive field, and the discovery is considered particularly significant due to the fact that a new producing horizon has been found which may produce on other known South Arkansas structures, and the entire territory is again thrown open to exploration.

Regionally the Schuler discovery, Lion Oil Refining Co. No. 1 Morgan, section 18-18-17, is 8 miles southwest of El Dorado and about midway between the El Dorado and Haynesville, La., oil fields. From a total depth of 5,566 feet, the well flowed high into the derrick following initial drill stem test, and estimates of potential ranged to 5,000 bbls. daily and upward. On accurate gauge the well flowed 60 bbls. hourly through three-quarters inch tubing choke, casing pressure 1,900 pounds, tubing pressure 1,475 pounds, with about 3,000,000 feet of gas. After testing the well through various size chokes, gas production began to increase, and all indications pointed to the fact that the casing seat had failed. A later test on three-quarters inch tubing choke yielded 32 bbls. hourly, with 9,000,000 feet of gas. Original gravity of the Schuler oil tested 37, then rose to 41, and on last test with increased gas production, the crude indicated a gravity of 49. The Lion company has not announced whether it will recement casing or not, and it is thought likely it will permit the well to produce the large volume of gas to provide the much needed fuel for its drilling, field, and refinery operations near El Dorado.

The Schuler area was first mapped by seismograph last summer, indicating an anticlinal structure with about 250 feet of closure, extending over possibly a 12 square mile area, axis running slightly in the northwest-southeast direction. More conservative estimates place the possible producing area at about 4 to 6 square miles.

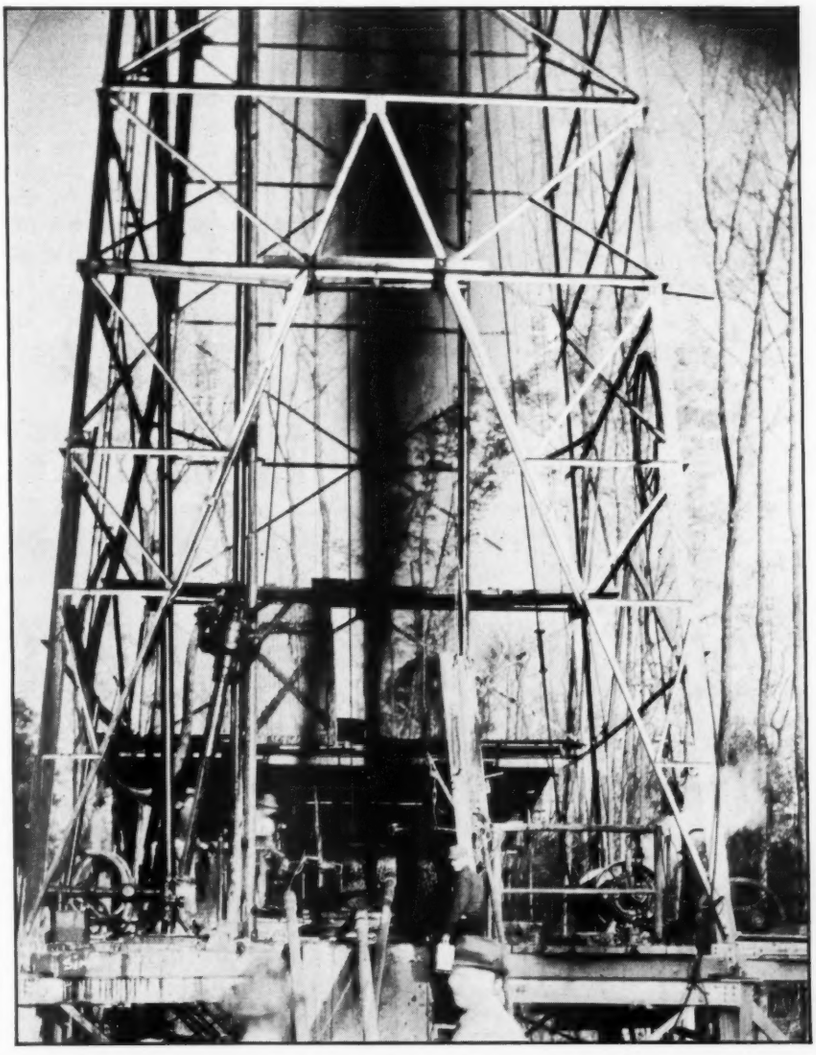
Production is from a marine type of Lower Travis Peak sand. First gas saturated sand was cored from 5,543 to 5,553 feet, the lower portion of which carried some oil. A 10-foot impervious layer of shale and hard silt was drilled below 5,553 feet, the bit then entered the true oil horizon and only took 3 feet of penetration. The 9⅝-inch casing was cemented at 5,563 feet, and all the oil production is thought to be coming from this 3-foot sand section. It is possible deeper drilling in the oil sand would result in a much larger well. Laboratory tests of the lower oil sand indicated a porosity of about 16 per cent, the saturation being 17.7 per cent of pore space. Future drilling may prove that complete separation may be obtained between the gas and oil sands, resulting in a much lower ratio than prevails at the discovery well.

Sufficient correlative data is not available to tie the Schuler producing horizon in with other deep exploratory holes in North Louisiana or South Arkansas, but a new producing horizon is definitely established by the discovery, providing operators with a new objective for deep drilling.

Originally C. H. Murphy, prominent banker of El Dorado and independent operator, associated with E. M. Jones of San Antonio, Tex., took options on extensive lumber company lands throughout Union County and eastward across the Arkansas line. Phillips Petroleum Co. entered into a deal with Murphy and Jones whereby the Schuler block, and several others, would be divided by checkerboarding the acreage, four-fifths to Phillips and the remaining one-fifth to Murphy and Jones (operating as Marine Oil Co. of El Dorado), and in consideration Phillips would detail the blocks by geophysical methods. Drilling clauses were included in several blocks, Schuler being one. Accordingly, the Phillips company mapped the Schuler structure with seismograph, and drilled No. 1 Morgan to 4,270 feet, where it was abandoned after finding no attractive showings. Lion Oil Refining Co. entered the picture by taking one-half of the leases held by Phillips and Marine Oil Co., together with one-half interest in the Morgan tract where the well was drilled, upon agreement to deepen the hole to 7,500 feet, unless commercial oil was found. The 5,560-foot level precluded necessity of deeper drilling at this time. Lion Oil holds about 7,200 acres.

A 4-inch line has been completed from the well to Lion Oil refinery near El Dorado, and four 500-bbl. storage tanks have been erected, and additional storage is available at the company's Constantin tank farm southwest of El Dorado.

Although no definite announcements of new locations have been made, several are expected by the Lion company and independents nearby in the immediate future. The Arkansas Board of Conservation has stated it will invoke proper conservation measures when needed, and already has asked for a 10-acre spacing pattern.



BOOM DAYS RETURN TO SOUTH ARKANSAS—*Lion Oil Refining Co. No. 1 Morgan, Schuler discovery well, flowing through drill stem on initial test*

SPARKS FROM THE NEWS

Supreme Court decisions of Monday relative to Wagner act merit careful study of every operator in all divisions of the industry. Aside from their immediate significance in labor matters, new broad principles regarding interstate commerce were laid down which no doubt will be the basis for extension of federal control into new spheres of action.

Bureau of Mines report first of week shows significance of unseasonably warm weather in February in petroleum products demand. Gasoline shipments increased 18 per cent over February last year—much more than was expected—while gas oil and distillate decreased despite the fact that more oil burners were in operation.

So far this year wildcat tests located near old producing areas have been more successful than those drilled in remote regions. The latest promising completion is south of the old Cromwell field in Seminole County, Oklahoma. In Ector County, Texas, a new test may join the Goldsmith and Cummins pools.

Union leaders' contentions that refinery operations are of such nature employes should affiliate with an industrial type of organization rather than the skilled crafts reflects among other things an astounding ignorance of plant operations. There is a vast difference in point of training, skill and responsibility between the stillman of a modern cracking operation and the routine worker of an automobile assembly line.

The old-timer who can recall when use of electricity around a refinery and in the fields was forbidden due to supposed fire hazards would have been amazed at present-day applications discussed at the Shreveport meeting.

Madison indictees continue to file motions in an effort to find out what specific charges they will face when the trial opens. In the meanwhile removal hearing underway at Houston may force government to disclose most of the testimony on which its case rests.

Final government data for the first two months of this year indicate that petroleum exports may be coming back so they will once more become an important factor in general market developments. The increase over the same period last year was 32.5 per cent in case of gasoline; 48.1 per cent for kerosene; 27.2 per cent for lubricating oils with an aggregate gain for all crude and refinery products of 15.9 per cent.

The Schuler field discovery in Arkansas is once more emphasizing the real meaning of the name El Dorado. Many followers of new discoveries who left that oil center following the Smackover boom are returning.

Some of the suggested legislation in regard to water pollution offered at this time would complicate position of refiners and producers without aiding in solution of problem. An immediate need is for state and federal authorities to determine accurately the source of present pollution. Oil operations are often blamed for contamination of water which originates elsewhere.

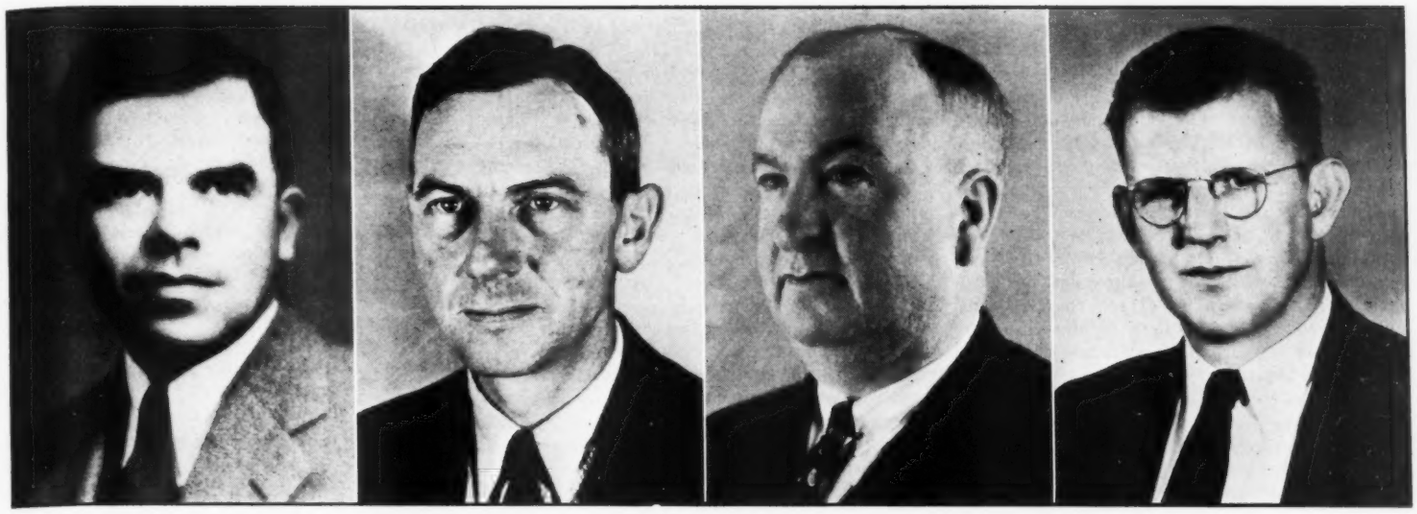
What is ahead in pipe line transportation is apparent in the case of a Mid-Continent and Middle West gasoline pipe line system. The line will be looped at several points to take care of the normal expansion in demand.

A prominent natural gasoline manufacturer points the way to leaders in other divisions by making an individual award for meritorous service in that branch of the industry. The oil business has lagged behind older industries in recognizing individual accomplishments.

There is important difference in position of federal government and oil industry in regard to future reserves. The government sets up naval and other reserves based on available geological information. The oil man knows that reserves are not actually established until several wells are drilled. Should an emergency arise it will be the latter reserves which can be depended on to furnish the needed oil.

OIL INDUSTRY'S FASTEST CONSUMER

Three-miles-a-minute United Air Mainliner on new 15 1/3-hour California-New York schedule consumes 81 gallons of 87-octane fuel and three quarts of oil per hour



PRESENTED PAPERS BEFORE A.P.I.—*Ernest K. Parks, H. E. Winter, K. C. Hayes, P. H. Jones*

Pacific Coast District of A. P. I. Holds Meeting at Los Angeles

By L. P. STOCKMAN and T. P. SANDERS

LOS ANGELES, Calif., Apr. 13.—The annual spring meeting of the Pacific Coast district of the American Petroleum Institute Division of Production was held in the Biltmore Hotel, today, with L. L. Aubert, chairman presiding at the opening session and introducing A. L. Weil, president of the General Petroleum Corp. and of the California Oil and Gas Association, who delivered an address on "The History of the Oil Industry in California." About 750 attended.

Following Mr. Weil's address the technical session started and the following papers were presented: "Field Control of Drilling Mud," by P. H. Jones, Union Oil Co.; "Wire Line Core Barrel," by W. A. Clark, Texas Co.; "Rotary Table Horsepower," by C. S. Forsberg, Honolulu Oil Corp., Ltd.; "Plant Pipe Reclamation," by K. C. Hayes, Standard Oil Co.

At a session on production, papers were presented on "Acidization of Oil Wells," by M. W. Morris, Standard Oil Co.; "Reconditioning Procedure with Portable Equipment," by H. E. Winter, Union Oil Co.; "Selection of Size of Oil Strings in Wells in California," by E. K. Parks, Standard Oil Co.

Committee chairmen in charge of plans included Howard C. Pyle, Union Oil Co., program; Ralph Marshall, Oil Well Supply Co., arrangements, and Bruce Barkis, Rio Grande Oil Co., nominations.

One of the interesting papers was presented by Ernest K. Parks, Standard Oil Co., of California, on "Selection of Size of Oil Strings for Wells in California." It was pointed out choice of the best size oil strings to use in a well requires analysis of the functions of the oil strings, the effect of their size on operating conditions throughout the life of the well, and a study of the functions which vary with size.

Wells in other oil-producing regions are usually completed with open hole, through productive zone, but in California conditions require the pipe be set through the pay. A pipe so used is called the oil string, although it may be a short liner.

The requirements of an oil string were enumerated by Mr. Parks as follows:

1. It must preserve the well.
2. It must be strong enough to resist forces of caving formations.
3. Serve as a screen to prevent solids from coming into the well.
4. Should resist corrosion and erosion.
5. Must endure internal wear of tubing and fishing and clean-out tools.
6. Above all it must allow the fluid to enter the well.

Vertical slots in perforated pipe give least reduction of resistance to bending stresses, while horizontal slots give most. This is not the case with compressive strength.

In consolidated pay the design of perforations is of little importance, but in loose material, the design must prevent removal of too much material, around the hole, which may cause caving. Removal of this material promotes rapid flow rate, but best present engineering practice calls for drilling the maximum-size hole justifiable and protecting it with suitable casing properly perforated.

The effect of diameter of oil string has been obscured because the perforated area of slotted pipe usually amounts to about 2 per cent of the area of the outside of the pipe. It is obvious so far as effective area is concerned, perforated pipe is a poor substitute for open hole. The advantage of a larger well-bore could be available by setting perforated pipe in a large well-bore which has been filled with selected gravel, but this awaits practical demonstration.

Records show that California producers have a preference for 6⅝-inch casing for oil strings.

Larger sizes and heavier weight

L. L. AUBERT
Chairman, Pacific Coast district

H. C. PYLE
Chairman, Program Committee

casing gives more strength per pound of steel, so that by buying larger pipe more value is received per dollar and a larger area per linear foot can be occupied by perforations.

Large oil string diameters usually are of little advantage during flowing stage, but in gas-lift stage, a large hole may be necessary for maximum profit. In the pumping stage, the diameter of oil string determines size of pumps which can be used. This has little bearing on rod pumps, since their diameter is also limited by polished rod loads, but hydraulic pumps and bottom-hole centrifugal pumps contend with unit pressures and not with total loads, and therefore extend the limits of pumping capacity both as to depth and as to rate of production. With these pumps rate of production is limited by size of oil string.

In conclusion, Mr. Parks pointed out, the choice of sizes of oil strings should take into consideration the possible production practices and the advantages of large sizes of flow strings are greater as depth increases.

Following along the line of California practice C. F. Forsberg, Honolulu Oil Corp., Taft, Calif. presented a paper on "Rotary Table Drive." The purpose of the paper was to present data covering power requirements for rotary table drive because individual drives are becoming more popular. One thing proved was that, as the weight on the bit is increased in soft formations and the drill is speeded up, the power requirements increase very rapidly.

The tests were conducted on four wells in the Buena Vista Hills field and different type bits were used. In one test the electric motor was direct connected to the rotary table by means of a jaw clutch and the motor and table mounted on a common base. The test developed costs of operation and upkeep. Another advantage was in the elimination of chain between cathead and table and reduction of accident hazard.

Mr. Forsberg reports one operator is considering the use of table speeds of 500 r. p.m. for drilling. It was observed with the direct drive in coring at from 120 to 140 table r.p.m. using 6⅝-inch and 9⅝-inch core barrels practically 100 per cent recovery of core was obtained. The author recommends further study of this problem to work out power tables for various conditions of drilling.

Wire Line Core Barrels

W. A. Clark, Texas Co. of California, discussed "Use of Wire Line Core Barrels in California" and in part stated the practice of coring with a core barrel removed by a wire line was developed 11 years ago and in spite of unimpressive beginning and the necessity of important mechanical changes it is now in quite common use. Its best adaptations are on wildcat wells, intermittent coring and in deep tests. Its value in shallower wells depends on character of formations, especially footage made per bit. The use of the wire line core barrel does not eliminate the conventional coring devices, particularly in shallow wells and wells in which the number of cores to be taken does not justify the expenditure for additional equipment such as a sand reel. Two types of wire line core barrels were described by Mr. Clark and he stated that best results have been obtained using one or two points on weight indicator and about 100 r.p.m. turntable speed while coring. Recoveries have averaged over 80 per cent.

"Plant Pipe Reclamation" was presented by K. C. Hayes of the Standard Oil Co. of California in which he discussed the reclamation of pipe and other oil field tubular goods as carried on in regularly established plants. This method should be distinguished from the better known practice of reclaiming pipe lines in place. Reclamation plants maintain an organized factory system in which the pipe is internally torch heated to remove oil or protective coating, heated in continuous process furnace at 1,300° F., cleaned on rack with steel grit blast, beveled on ends for welding or threaded for couplings, electric spot welded on pits and corroded areas, straightened and graded. Grading is an important part of process because this determines future use of reclaimed pipe.

Henry E. Winters, district engineer, Union Oil Co. of California, prepared and presented a paper entitled, "Reconditioning Procedure with Portable Equipment," dealing with the reconditioning of wells. Mr. Winters pointed out that usually the first obstacle encountered in reconditioning oil wells is poor well records. It is often assumed the engineer is of little value on repair work, but this class of work actually involves more detailed study than the drilling of the new wells since records must be studied, materials selected and the use of many new devices for locating formations and water zones considered. Generally the investment at stake makes it advisable to use only efficient personnel on reconditioning work. Types of equipment used are portable hoists and sand reels, rotary equipment and cable tools. The most desirable equipment is the portable hoist with two working drums which is mounted on truck or trailer. Repair work is generally for stimulation of production, insertion of liners, shutting off water, plugging back to upper zones or abandonment. These operations usually offer possibilities for considerable return on the investment and in the future will be considered of importance equal or greater than drilling in the speaker's opinion.

Election of Officers

District officers were elected as follows: L. L. Aubert, chairman, Bankline Oil Co., Los Angeles; Howard C. Pyle, vice chairman for Los Angeles Basin, Union Oil Co., Los Angeles; W. L. Bagby, vice chairman for Coastal District, Shell Oil Co., Ventura; J. H. Sargent, vice chairman, for San Juaquin Valley, Kettleman North Dome Association, Avenal; W. G. Corey, treasurer, Pacific Gear & Tool Works, Los Angeles; D. S. Kilgour, secretary, California Oil & Gas Association, Los Angeles.

Advisory Committee: W. L. McLaine, chairman, General Petroleum Corp.; L. L. Aubert, Bankline Oil Co.; Bruce Barkis, Richfield Oil Corp.; A. H. Bell, Continental Oil Co.; Elmer Bolton, Ohio Oil Co.; H. S. Cole, Jr., Texas Co.; L. A. Cranson, Honolulu Oil Corp., Ltd.; W. H. Geis, Super Asphalt Co.; Dana Hogan, Hogan Petroleum Co.; Joseph Jensen, Associated Oil Co.; W. N. Lacey, Calif. Inst. of Technology; L. B. Little, Standard Oil Co.; H. M. Macomber, Pacific Western Oil Co.; H. F. Owen, Ethel D. Co.; R. L. Patterson, U. S. G. S.; F. E. Rehm, Shell Oil Co.; Wm. Reinhardt, Union Pacific Railway; A. C. Rubel, Union Oil Co.; R. E. Stearns, Universal Consolidated Oil Co.; Lester Uren, University of California; A. E. Wallace, Western Gulf Oil Co., and W. C. Whaley, Barnsdall Oil Co.

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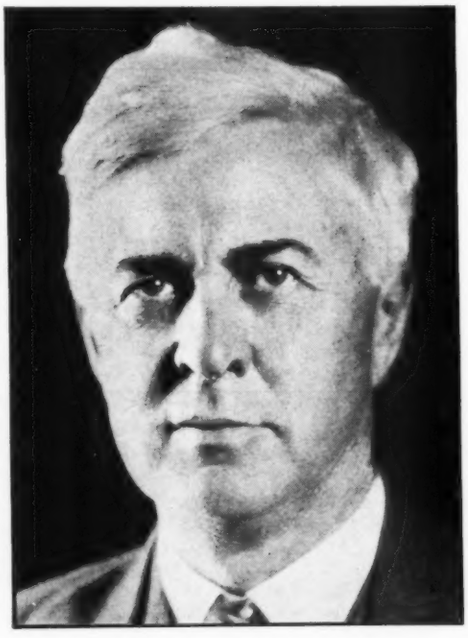
MADISON OIL COUNSEL

MADISON, Wis. — Recognized as one of the ablest of Wisconsin attorneys and, with his snow-white hair, one of the most striking in appearance, is Herbert H. Thomas, Madison, associate defense



HERBERT H. THOMAS

counsel in the oil cases. With Col. William J. Donovan, New York, Mr. Thomas is retained locally as legal representative of nearly all the 30 corporate defendants—all, in fact, except Gulf companies.

Mr. Thomas has practiced law in Madison since 1918. For several years he has performed legal services for oil corporations, outstanding having been his success, upon appeal to the state supreme court, in State vs. Wadhams Oil Co., in eliminating the state chain store tax law as applying to oil stations.

Chicago Rate Case

The question whether the Natural Gas Pipe Line Co., of America will be instructed to make available to the Illinois Commerce Commission its records relating to transactions with the Chicago District Pipe Line Co., was taken under advisement by a three-judge federal court.

The court has under consideration two motions: (1) by the Natural Gas Pipe Line Co., for an injunction against the commission restraining enforcement of the latter's order of March 3 instructing the company to turn over its books and records for examination; and (2) by the commission to dismiss the bill of complaint filed by the Natural Gas Pipe Line Co. Briefs were ordered filed on both motions.

Conflict arose when the Illinois Commerce Commission issued a citation last November against the Chicago District Pipe Pine Co. ordering the company to show cause why there should not be a reduction in rates to distributing companies in Illinois. The company supplies natural gas wholesale to three operating utilities, including the Peoples Gas, Light & Coke Co. The Chicago District Pipe Line Co., in turn purchases its entire supply of natural gas from the Natural Gas Pipe Line Co. of America.

In connection with the right of the Peoples Gas, Light & Coke Co. to raise its rates 16 per cent to Chicago consumers, which is being opposed by the commission, Harry R. Booth, counsel for the commission, launched an investigation to determine the profits made by affiliates of Peoples Gas from sale of natural gas.

Peoples Gas, Light & Coke Co., he pointed out, owns all the stock of the Chicago District Pipe Line Co., and 26 per cent of the stock of the Natural Gas Pipe Line Co.

Petroleum Accountants

The April meeting of the Petroleum Accountants Society of Tulsa will be held on Friday, the 23rd, at 6:00 p. m. in the Winter Garden of the Mayo Hotel. The guest speaker will be C. P. Parsons of Halliburton Oil Well Cementing Co., who will discuss fighting oil and gas well fires.

Madison Arguments Rehearsed Before Houston Commissioner

By NEIL WILLIAMS

HOUSTON, Tex., Apr. 13.—A contention that any combine or concerted effort on the part of major companies to raise or stabilize gasoline prices as charged in the federal indictment at Madison, Wis., would have been legal was made in the hearing before U. S. Commissioner W. F. Carothers at Houston of O. H. Carlisle, division sales manager, Gulf Oil Corp., who is fighting his removal to Wisconsin to face charges of having engaged in an "unlawful conspiracy in restraint of trade and commerce in gasoline."

Attorneys for Mr. Carlisle made it known they were not admitting Mr. Carlisle, or Gulf Oil Corp. had been a party to any combine or conspiracy. Throughout the hearing the defense entered testimony to prove the company never had engaged in any buying program, except during the Ickes buying pool, and that all gasoline purchases always have been made only to meet actual needs of the company and from any source which offered the best price advantage possible, location of the material to market considered.

Over the objections of government attorneys, the defense introduced documents, including the petroleum code and its amendments, correspondence of Oil Administrator Ickes, and press releases carrying 1935 dates to support the contention that although the enforcement provisions of NRA had been invalidated prior to the period in the indictment, the government continued its stabilization program and efforts to raise prices, and has continued to give its approval to any steps the industry might take to stabilize markets.

The period in which the alleged conspiracy took place, dates from February, 1935, at the time of the formation of the East Texas Marketing Association, a group of East Texas independent refiners, which a group of major companies is alleged to have conspired with for a concerted gasoline buying program with the purpose of raising and stabilizing prices.

Government attorneys maintained the documents were irrelevant, and that the correspondence, telegrams and press releases, and government stabilization program following the abandonment of the Ickes buying pool in October, 1934, dealt only with local price wars in retail markets and had nothing to do with the alleged buying program in the indictment.

In cross examination of defense witnesses, government attorneys, in attempting to support their charges of a conspiracy, have sought to prove the major companies engaged in a concerted buying program since February, 1935, and that the strengthening of gasoline markets and higher prices since April, 1935, have been due to these alleged purchases.

Defense Testimony

Defense testimony has claimed there has been no concerted or definite buying program in East Texas so far as Mr. Carlisle and Gulf Oil Corp. knows anything about, and that all strengthening and price increases reflected have been due to the decided upturn in consumption since then, and also to enactment of the Connally act, in March, 1935, to the work of the Federal Tender Board in East Texas, and to the efforts of the state proration enforcement agencies in shutting off the source of supply of gasoline. A statement of possible far-reaching importance was presented by Commissioner Carothers to the counsel Tuesday in which he instructed that the remainder of the testimony be restricted to the sole question of whether or not Mr. Carlisle engaged in or knew of any alleged buying program in East Texas, or conspiracy to raise prices, and whether or not he was concerned with what went on in the states in the midwestern district named in the indictment. Testimony until now has drifted to embrace the question of the existence of a buying program generally among major companies.

Mr. Carlisle, placed upon the stand Tuesday, testified that with the exception of the period of the Ickes buying program, his company, so far as his district is concerned, never had engaged in any buying program, and the Houston district never had been told when or where to buy gasoline. He stated the company had been buying gasoline in Texas for as long as 20 years to meet requirements, and that the procedure of buying since the Ickes program was abandoned had been no different than before. Purchases, he said, were made only because the company needed to buy and always were made at the lowest possible prices and from any legitimate source which could offer the lowest price. He expressed opinion his company was forced into the Ickes pool, and he did not approve of it.

In the hearing, which opened April 7, it was set forth that the burden of proof rests with the defense, which must show there was no reasonable cause for the indictment. This was in opposition to the defense argument that commitment to the Wisconsin court's jurisdiction should be refused unless the United States Commissioner should be convinced there is good probability of conviction. The commissioner has the prerogative of hearing all, or as much of the evidence as necessary to decide the question.

Testimony by the defense attempts to prove: First, that the dealings of Mr. Carlisle and the Houston division are limited to Texas, and second, that, in these dealings, neither Mr. Carlisle nor the company has engaged in any gasoline buying program or combine that might have as its purpose the artificial raising or fixing of tankcar prices of gasoline.

H. S. Gwyn, assistant manager of the sales department, Gulf Oil Corp., Houston division, testified that the Houston division, although nominally including Oklahoma and New Mexico in its territory, does no business out of Texas. Many years ago the company had a few agencies just over the New Mexico line but, due to unfavorable marketing conditions in that state, the company abandoned these agencies, and since has had no agencies or distribution in that state or Oklahoma.

Mr. Gwyn testified that during the last several years, embracing the period named in the indictment, he, and not Mr. Carlisle had handled purchases of gasoline in the district almost exclusively. Mr. Carlisle, although head of the department, had not concerned himself with this phase. The company had been forced for many years

Humble Oil & Refining Co. plant at Baytown, Tex.

to buy varying amounts of gasoline each month from other refiners in the state because of inability of its own refineries to supply the requirements for its own sales. A large part of the gasoline refined at the company's Port Arthur refinery, was moved by tanker to the company's Atlantic Seaboard markets.

Since 1935 he had purchased between 7,000 and 8,000 carloads of gasoline, approximately 50 per cent of which had been bought below the published spot market prices, representing a saving of upwards of $100,000. The purchases were made almost entirely through a broker, J. M. Bradshaw of Dallas, who was paid a flat $2.50 per car. In these purchases he was not told from any sources from whom to buy the gasoline, and in most instances, did not know from which refiners the purchases were made until notified by Mr. Bradshaw. Mr. Bradshaw had no instructions from whom to buy the gasoline, and the gasoline was bought in open market to the best price advantage. Neither he, nor the company, so far as he knew, had dealings with the East Texas Refiners Marketers Association as an association, nor with any other group.

Opinion on Pool

Continuing, Mr. Gwyn testified that in the pool he was forced to pay from 5 to 6 cents for gasoline although the company could have bought gasoline for 2½ cents or more under that figure. He expressed opinion continuation of the pool would have been ruinous, and that the pool had served no good purpose in strengthening prices. On questioning he recounted the market had been established around 4 cents in October, the last month of the pool, although gasoline was available at 2½ cents. Following abandonment of the Ickes pool, the market broke in November to 2 to 2½ cents,, and remained low, with very little fluctuation, until spring of 1935, when it strengthened some. Since then, Mr. Gwyn explained, there has been a decided upturn in consumption with some price increases, but price increases had not been in proportion to the demand. He denied the market strengthening had been due in any way to the distress purchases made by the major companies during the Ickes program.

The witness was questioned closely as to the proportion of purchases of gasoline to sales of gasoline. Testimony showed purchases represented only about 2 per cent of the gasoline marketed by the company in the district (Texas). Government attorneys attempted to show the company could take part in a buying program in which it could afford to pay higher prices for the comparatively small amount of gasoline bought if this would raise the price of the other 98 per cent supplied by the company's refineries. The witness said the high prices paid for gasoline under the Ickes program apparently had no strengthening effect on the general market and the company frequently had to sell at ruinous prices. He reiterated the company has had no buying program since the Ickes program and always buys from whatever source it can get the best price. No dealings were made through the East Texas Refiners Marketers Association, or any other group.

William A. Slater, general manager of manufacturing for the Gulf companies, at Pittsburgh, Pa., was questioned concerning refining operations and dealings between the refining department and the sales department. He said that in May, 1935, while the code was in effect and refinery runs were allocated among the plants, the Port Arthur refinery was operating at from 68 to 70 per cent. With abandonment of the code runs were increased and in July the plant was operating at from 90 to 95 per cent.

A short time later for a couple of months operations dropped to from 85 to 90 per cent but by the close of 1935 was operating at 100 per cent. Since then it has been running 100 per cent or more of rated capacity and has not been able to supply all requirements. Purchased gasoline had been received at Port Arthur at least since 1921, and possibly before. He testified on stocks necessary, stating at least 60 days supply should be maintained although at times this supply had been less. Government attorneys tried to get him to state the gasoline refining capacity of the company's plants but he maintained this was impossible due to varying conditions. He was willing to give the crude throughput capacity.

SPECIAL COUNSEL FOR GOVERNMENT AT MADISON

John Henry Lewin, Hammond E. Chaffetz and Grant Kelleher

Refiner's Testimony

Henry B. May, East Texas refiner, told of organizing the East Texas Refiners Marketers Association. The government charges the marketing association engaged in a "buying pool" conspiracy with major companies. Mr. May stated he alone was responsible for starting the association by calling a meeting of selected independent refiners of East Texas, January 29, 1935. There had been no conversations or agreements concerning buying gasoline, either before the meeting or since.

Mr. May said the purpose of the organization was to find logical markets for members of the association, to encourage the buying on the part of major companies of gasoline manufactured in East Texas from legally produced crude, to fight gasoline tax evasion, and to counteract prospective court attacks on the validity of the Connally act. He denied he knew of any definite buying program on the part of major companies to boost the price of gasoline, declaring the only dealing of the association had been with individual buyers. Government attorneys questioned him at length concerning employment of Neil Buckley of the Cities Service Export Corp., and concerning conferences with C. E. Arnott of Socony-Vacuum and "chief stabilizer" under the code authority. Mr. Buckley, it was stated, was employed solely to convince the major companies of the sincerity of the group of refiners in the association in complying with all proration laws of the future. Mr. May said East Texas refiners as a whole had a black name in regards to running of hot oil and it was hard for a refiner in East Texas operating on legal oil to do business with major companies because of this. Mr. Buckley was paid, he testified, only expenses. The conferences with Mr. Arnott were solely for the purpose of convincing Mr. Arnott of the sincerity of the group, as it was felt Mr. Arnott could be of help in convincing other major company executives members of the association could be dealt with safely.

Mr. May said under cross examination buying on the part of major companies probably would result in advances in market prices, but denied the association was formed for the specific purpose of boosting the prices or creating a pool to establish higher prices.

Postponement at Madison

MADISON, Wis.—Arguments on defense motions in the government's antitrust cases against oil companies, scheduled for April 15 and 16 in federal court here, have been postponed until April 20 and 21, Judge Stone announced.

Further clarification of the indictment has been demanded in a supplemental motion for a bill of particulars filed on behalf of Shell Petroleum Corp., and two of its officers.

The motion, in defense of Alexander Fraser and P. E. Lakin of St. Louis, president and general manager, demands to know whether the government claims the two alleged buying pool programs in the East Texas and Mid-Continent fields were parts of a single conspiracy. The indictment, it says, does not charge Shell participated in the East Texas buying program and it seeks to ascertain whether the company is charged with conspiring to engage in that program and in the alleged conspiracy.

The motion also asks the government be required to state whether it is alleged that the "combinations and conspiracies" caused a loss to jobbers "of large sums of money" or merely caused a rise in prices to consumers.

"These defendants respectfully show to the court," it states, "that a concurrent rise in the spot market tankcar prices and in the retail price of gasoline would not affect the profits of jobbers nor cause any loss to them; and these defendants show the court that the allegation of the indictment . . . . that the defendant major oil companies 'have arbitrarily exacted from jobbers within said district large sums of money' is ambiguous and misleading if it is intended to allege that such jobbers suffered no actual loss on account of the concurrent rise in prices to consumers and therefore these defendants are entitled to a more particular statement in regard to such allegation."

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Regulation of Water Pollution Discussed at Oil City, Pa.

OIL CITY, Pa.—The problem of water pollution, and regulatory legislation pending in congress, were discussed by W. B. Hart, Atlantic Refining Co., Philadelphia, a member of the American Petroleum Institute committe on pollution, at a meeting of the western Pennsylvania groups of the Department of Manufacture, National Petroleum Association, held here.

"Periodically, waves of proposed legislation have developed and with ever increasing strength of support," Mr. Hart said. "This situation has reached a point where the passage of some anti-pollution bill seems to be inevitable."

He described the Vinson bill as "a worthwhile, workable instrument" and the Lonergan bill as a "drastic measure under which industry could well experience great difficulty."

Describing the Vinson bill as "the best example of the so-called 'study and investigation bill'," Mr. Hart said it provided for making the U. S. Public Health Service an active agency and clearing house for study and experiment and for granting loans or outright allocations for antipollution work. "It all depends on industry and population taking the initiative." Amendments creating a board in the health department to work with industry, giving the army engineer office and secretary of war the right to pass on plans affecting flood control or navigation and recognizing a designated state department, "really make the bill a worthwhile, workable instrument."

The Lonergan bill, Mr. Hart said, gives no consideration to population or industry and little to the states, definitely requiring, however, that prosecution as a public and common nuisance be brought, with a practically all-inclusive definition of pollution.

Industry has been largely responsible for the defeat of previous proposed legislation. This attitude, Mr. Hart said, has indeed gained industry, "the reputation of being solely obstructionistic."

"Oil pollution, unless very serious, is probably less harmful than many other forms," he said, "but it is visible pollution and therefore highly condemned."

Further investigation is necessary for providing for disposal of salt water. Acid and caustic wastes in refining can be handled by mixing opposite wastes to neutralize their characteristics of pollution, and the smallest amount of chemical, acid or alkali, will be needed.

"Much has been learned about separation of oil from waste water," Mr. Hart continued. "Within the past three years the similarity between the refinery separator and the sedimentation chamber of the sewage disposal plant or the water purification plant settling basin has been realized. The A.P.I. committee has gone to sanitary engineers and water chemists and operators and learned much more. This knowledge has been crystalized into the design of a separator which will serve for experimentation.

"Finally, a word must be said about the claims made that 'we cannot help ourselves so we should have an exemption.' An attitude of total disregard for pollution prevention makes a poor platform on which to base this claim. Let us make use of what we have in the way of knowledge as to what to do, also let us clean up where simple housekeeping is the remedy. Where that is done we really have done all we know how to do and our claim is valid. But until that is done and real cooperation is attained, we are faced with two things—seriously diminishing resources such as streams, lakes, etc., provide and the ever recurrent apparition of drastic legislation."

Mr. Hart was introduced by M. C. Mallon, National Petroleum Association. P. M. Robinson, Pennzoil Co., chairman of the Oil City-Titusville group, conducted the meeting.

D. E. Buchanan Named Chairman of Delegation to Paris

WASHINGTON, D. C.—Secretary of State Hull has appointed D. E. Buchanan of Hanlon & Buchanan, Inc., Tulsa, as chairman of the official delegation from the United States to the second World Petroleum Congress in Paris, France. The congress is being held at the invitation of the French government, June 14 to 20.

Other members of the delegation appointed by Secretary Hull are:

Herbert Baxley, Socony-Vacuum Oil Co., New York; William M. Brewster, managing director, "Raffineries de Petrole de la Gironde," Paris; W. D. Crampton, Standard Oil Co. of New Jersey, Paris; H. A. Hassan, Sinclair Refining Co., Paris; Charles E. Lanning, American Petroleum Institute, London; Wallace E. Pratt, Humble Oil & Refining Co., Houston, Tex.; Col. James Gordon Steese, U. S. Army, retired, San Antonio, Tex.; C. B. Veal, research manager, Society of Automotive Engineers, New York; and Charles W. Wright, vice consul, American consulate general, Vienna.

Guffey Bill Through Congress

WASHINGTON, D. C.—With house approval of a conference committee report which adjusted senate and house differences on the Guffey coal bill, only President Roosevelt's signature is needed to place the legislation on the statute books. Labor provisions of the invalidated law, to which the Supreme Court objected, were omitted from the revised bill, but price-fixing remains. Seven $10,000-a-year members of the national bituminous coal commission would be empowered to fix minimum and maximum prices for coal. Producers would be required to comply with a code of fair trade practices and those who failed would be liable to a penalty tax of 19½ per cent of the sale price of coal at the mine.

THE MARKETS*

CRUDE OIL: *High rate of well completions which are approximately equal to the yearly record of the industry is responsible for a continued heavy production which is more than 200,000 bbls. daily in excess of estimated demand for April as projected by the Bureau of Mines. California, Oklahoma and Texas expected to reduce output over remainder of month. More "free" crude available with general market firm.*

REFINERY: *Heavy seasonal demand for several products including tractor fuels in rural sections. Lubricants stronger with scattered price advances. Gasoline shipments increasing.*

TANK-WAGON AND SERVICE STATION: *No general changes. Higher prices anticipated over next few weeks.*

FINANCIAL: *Initial first quarter statements encouraging and strength shown in several oil stocks. Average prices for 30 representative stocks for week ending April 10: High, 44.66; low, 41.54; close, 42.89. Week ending April 3: High, 44.50; low, 42.22; close, 43.95.*

**Detailed information in Market Section.*

Michigan Overproduction Is Calling for Proration

MUSKEGON, Mich.—With Michigan rapidly mounting toward daily crude production of more than 1,000,000 bbls. a month, and possibly as high as 50,000 bbls. a day, or 50 per cent more than the million-barrel pace maintained from January, 1935, to the middle of 1936, producers, particularly in the new Buckeye Township, Gladwin County, area, have been forced to give serious consideration to proration during the past week.

Within four months the Michigan picture has been transformed from a critical shortage of crude to meet its own refinery demands to one of threatening overproduction, in excess of refinery as well as pipe line capacity. The change has been almost wholly due to the Buckeye field.

Realizing the seriousness of the situation, a group of leading operators met in Saginaw to discuss the outlook. They decided immediate steps must be taken to organize a voluntary proration committee and agreed the proposed proration schedule to limit the output of wells initialing 500 bbls. or more would be placed into effect in Buckeye as soon as 95 per cent of the operators in the field approved the plan.

To date the required percentage has not been obtained, though members of the volunteer committee are hopeful of success before adoption by the Michigan state legislature, now in session, of a regulatory bill which would set up state control of production.

Arrangements already have been made to name O. H. White, former proration umpire for Porter and Crystal, as umpire for Buckeye.

Even 95 per cent cooperation probably would not eliminate possibilities of state control under a bill proposing to give the supervisor of wells, an executive of the oil and gas division of the state department of conservation, additional authority to control production as well as location, drilling and operations governed by legislation already in force. An advisory board would be set up with power to employ men to enforce the provisions of the act governing production and proration problems.

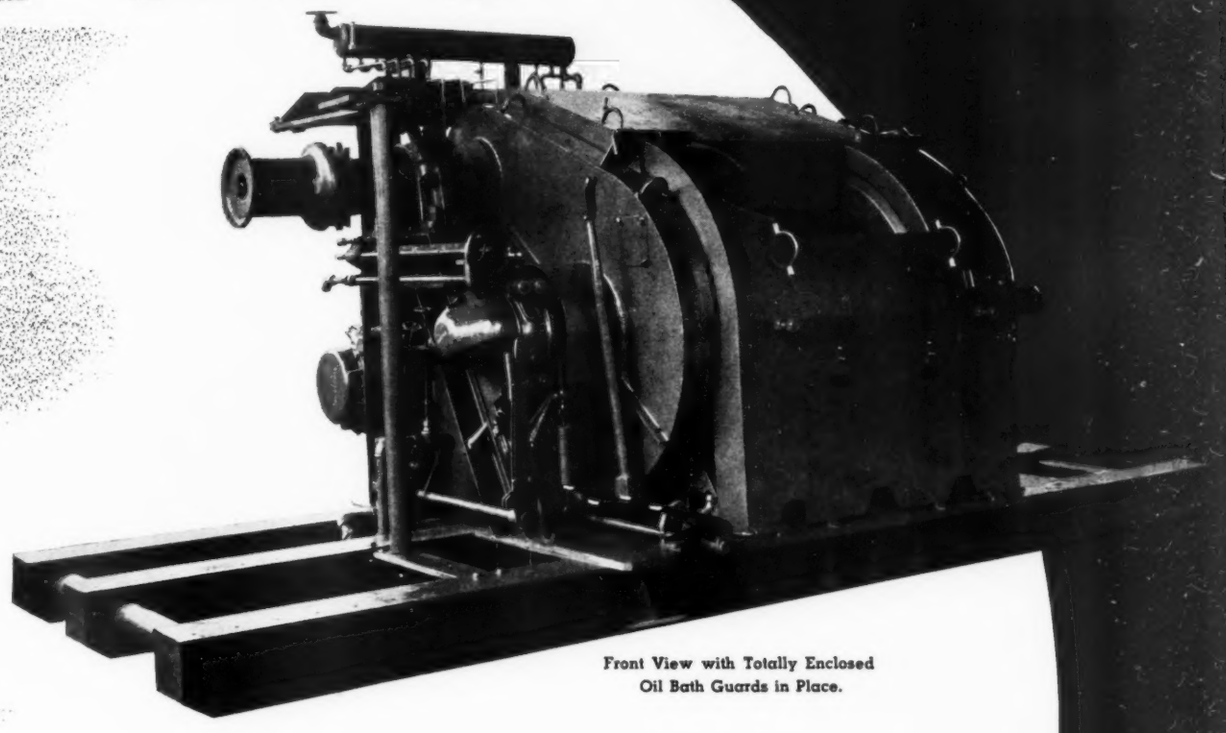
Landreth Reorganization

FORT WORTH, Tex.—The Landreth interests have been grouped into the Landreth Oil Corp. E. A. Landreth, of Fort Worth, is president; W. H. Landreth, Joplin, Mo., chairman of the board; R. H. Foster, Fort Worth, executive vice president and general counsel; A. N. Hendrickson, Midland, Tex., vice president and West Texas manager; L. A. Neal, Odessa, Tex., vice president in charge of production; W. M. Smith, Fort Worth, assistant to the president; J. P. Landreth, Chicago, Ill., vice president in charge of transportation, and R. E. Bruner, Fort Worth, secretary-treasurer.

Lance Creek Royalty Oil

Government royalty oil from the Lance Creek, Wyoming, field has been awarded to Terry Carpenter of Scotts Bluff, Neb., for one year beginning April 1, 1937. The estimated yearly production is 800 bbls., and the approximate premium which the contract provides for is about 15½ cents per barrel above the present posted price in the Lance Creek field.

EMSCO



Front View with Totally Enclosed Oil Bath Guards in Place.

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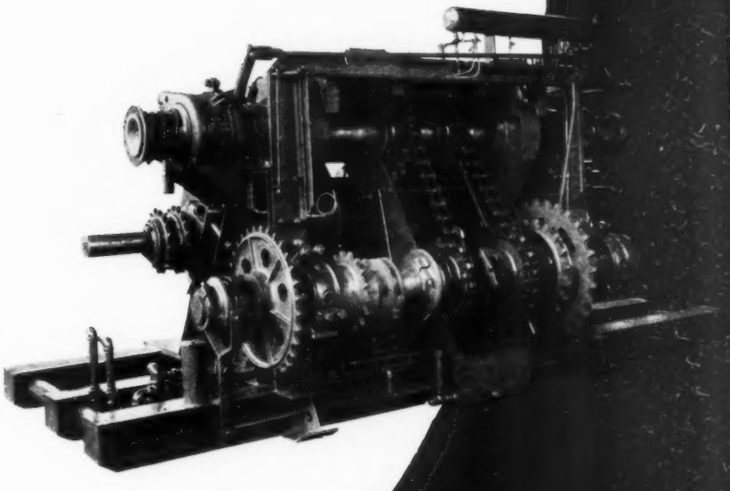

Rear View with Outer Section of Guards Removed.

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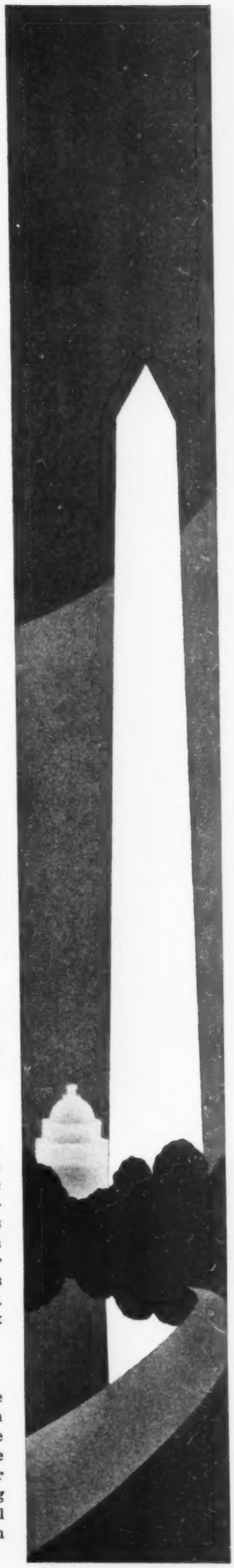
Wagner Act Ruling May Affect Industry's Status

By HENRY D. RALPH



WASHINGTON, D. C., Apr. 12.—Validation of the labor relations act as applied to manufacturing industries by the Supreme Court will facilitate organization of oil workers by requiring oil companies to bargain collectively and recognize unions which have a majority of their employes and by preventing them from fostering company unions and discharging employes for union activity.

There is little doubt, in the light of the decisions, that a majority of the court would uphold the Wagner act as applying to producing and refining and probably to bulk distribution of petroleum products. There is doubt as to its application to marketing operations, particularly local retail filling stations. In this connection, however, Chairman Madden of the N.L.R.B. said his board will not concern itself with labor relations in purely service trades which may mean that no attempt will be made to bring retailing under the act.

Many court decisions have held that when goods come to rest within a state for retail sale, interstate commerce has ceased, but some passages in Chief Justice Hughes' opinion suggest that filling station employes of a major company might be brought under the act if a strike there stopped the flow of commerce.

The decisions appear to accept the theory that congress may regulate anything that affects the flow of interstate commerce, and if this is adhered to congress may attempt to regulate production and prices of petroleum as in the Guffey coal act and wages and hours of employes in all major industries. While the Wagner act decisions do not clearly intimate that congress has such powers, there is no doubt that legislation of this sort will now be pressed vigorously, including the O'Mahoney licensing bill and revival of N.R.A.

Naval Reserve

The senate committee on naval affairs has reported bill, S. 1131, making appropriations for custody of naval petroleum reserves, with amendments. The principal amendment is modification of the present authority of the secretary of the navy to make contracts for sale of oil and gas products, other than royalty oil and gas, produced from naval reserves. All contracts of this nature must be approved by the president. Another amendment assures all contracts shall be made exclusively for protection of the reserves, or for carrying out the purposes of the bill. A third amendment requires the Navy Department to report to congress on all action to acquire lands or leases in the Elk Hills, California, naval petroleum reserve.

The bill extends all applicable provisions of the law covering naval petroleum reserves to naval oil-shale reserves. It gives the secretary of the navy, with approval of the president, authority to make leases and exchanges of land, and to use money derived from royalties so the reserves can be properly conserved. No leases of lands, nor any benefits from the lands shall extend to foreigners whose governments do not grant reciprocal privileges; and the secretary of the navy can cancel leases when the lessees fail to comply with regulations.

In its report the committee states that as long as the Elk Hills reserve can be adequately maintained and guarded from drainage, the navy will have an adequate supply of fuel oil underground.

Water Pollution Report

Attacking the problem of stream pollution from almost the identical angle of the Barkley-Vinson bill, H.R. 2711, the National Resources Committee has transmitted its report to the president. No basic changes in federal regulatory measures are recommended, but extension of federal interest and participation in local and regional pollution administration is urged. The measures recommended by the committee are: Designation of a federal agency to study and report on water pollution and abatement projects; provision for loans or grants to public agencies, and loans to nonpublic agencies for abatement works, approved by an overlying public works agency; provision for a central water resources planning agency as a clearing organization for loans and grants, and congressional consent to interstate compacts for stream pollution abatement.

The chief difference is that the report provides a public works administration body would coordinate and administer the pollution work while no form of P.W.A. is mentioned in the Barkley-Vinson bill.

Secretary Harold Ickes, chairman of the National Resources Committee, refused to comment. Questioned about the Lonergan-Pfeifer bill and its strict federal control provisions, asked, "Who'd pay the bill for all that?"

The interstate relations committee of the State and Territorial Health Officers Conference went on record as being strongly in favor of the Barkley-Vinson bill, in a recent meeting at Washington.

Bulk Contracts

Government efforts to execute bulk contracts with oil companies for service station delivery to individual government agents' cars has apparently struck a snag. When the companies were felt out on the plan, difficulty was experienced in getting a large enough bid to make it worth the government's while to go any further. The breakup of the chain system of gasoline distribution was the reason. Companies no longer owned the stations and could not pledge any definite number of outlets without going into multiple contracts with individual dealers.

On the government's side, the recent ruling of the comptroller's office, which dealt the credit card system a severe blow so far as the government was concerned, was in the way. These difficulties, along with others which the procurement division and other branches of the government ran into, have discouraged advocates of the plan.

Michigan Gas Tax Case

The Supreme Court has denied Standard Oil Co. (Indiana) review of its case concerning the Michigan gasoline tax which levies the tax on the wholesaler instead of the retailer. The company contended the tax should be levied when the gasoline was shipped from the tank farms and not when it was received at the tank farms, and that oil and gasoline which is stored should not be taxed before it has been offered for sale to the highway users. Also, it was argued, the tax was levied on more gasoline than was or could be eventually sold. Evaporation and spillage in shipment would make the tax unfair on that basis.

Freight Rate Investigation

Decision of the Interstate Commerce Commission on the request of the railroads to increase freight rates on petroleum products is expected by the middle of the summer, as the commission has granted request of the railroads to separate the so-called heavy basic commodity list from the remainder of the case involving general freight rate increases. Hearing on this part has been scheduled for April 22 in Chicago. Oral argument will be heard before the commission in Washington on June 16.

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Petroleum Industry Electrical Annual Meeting

—Le Doux, Shreveport.

H. E. Browne, Sinclair Pipe Line Co., Independence, Kans., reelected secretary-treasurer; Pat O'Connor, Stanolind Oil & Gas Co., Tulsa, retiring president; P. F. Davis, Texas Pipe Line Co., Tulsa, newly elected president; and E. M. Smith, United Gas System, Houston, newly elected vice president of the Petroleum Industry Electrical Association

SHREVEPORT, La.—About 100 members and friends of the Petroleum Industry Electrical Association met in Shreveport, La., for the tenth annual convention on April 8. Interesting and timely papers on communication systems, power requirements, cathodic protection and other extending applications of electricity to the petroleum industry, were delivered and discussed.

This association was formed in Fort Worth in March, 1928, and has continually grown in membership. Its membership is composed of superintendents of telegraph, telephone and electrical departments of most of the major pipe line, gas, oil and refining companies. The convention was also attended by many engineers from power companies, electrical manufacturers and other associates. Two new companies were represented in membership this year, Mr. Bennett of Cosden Pipe Line Co., Tulsa, and Mr. Oden of Colorado Gas Co., Denver, Colo.

P. F. Davis of Texas Pipe Line Co., Tulsa, was elected president for the coming year. E. M. Smith, United Gas System, Houston, Tex., was elected vice president, and H. E. Browne, Sinclair Pipe Line Co., Independence, Kans., was reelected secretary-treasurer. Pat O'Connor, superintendent of the electrical division of the Stanolind Oil & Gas Co., Tulsa, was the retiring president.

Houston was selected as the 1938 convention city, where the eleventh annual gathering will be held beginning the second Wednesday in April.

The convention opened with addresses of welcome by Morris Chambers, Standard Pipe Line Co., and H. B. Allen, Arkansas Natural Gas Co., both residents of Shreveport.

Following miscellaneous business matters, the opening morning session included papers on "Improved Types of Transmission Measuring and Methods" by L. E. Adler; "Development and Improvements in Telegraph Carriers," by Hezzie Clark; "Communication Methods," by L. T. Gibbs; "Interference Coordination Between Carrier Systems," by C. A. Shults, and "Application of Selectors to Simplexed Telegraph and Telephone Circuits," by J. O. Holder.

Included in the program for the second morning session were papers on "Variable Speed of AC Induction Motors," by C. E. Foster; "Insulator Leakage," by E. M. Smith; a discussion of power rates and contracts; and report by representative of Texas Co. on cathodic protection of tank bottoms; and a discussion of air cell batteries and their application.

A paper on "National Electric Code" was delivered by Frank Camus, and a discussion of "Railway Dispatching Equipment" by C. A. Davis of Graybar Co.

The remainder of the second afternoon session was opened to discussions by engineers and representatives of equipment companies represented.

The banquet Friday evening was attended by over 100 members and guests. Prior to the floor show, J. E. Elliott, power engineer for Southwestern Gas & Electric Co., Shreveport, spoke on behalf of the Petroleum Electric Power Club. Robert Allen, commissioner of public utilities, Shreveport, also addressed the gathering.

Committee Names New Areas in Oklahoma and Kansas

New oil areas in Oklahoma were named officially at a meeting of the nomenclature committee of the Mid-Continent Oil and Gas Association in Tulsa last week. The Kansas committee previously had named new areas in that state.

In Oklahoma, the area in section 31-21-2w, Noble County, was named North Lucien pool; North Bethel pool became the official name of the area in sections 25 and 36-10-7, Seminole County; sections 7 and 8, SW section 9, and W half section 16-9-7, were added to the East Seminole pool; Olympic and North Olympic pools in southwestern Okfuskee County were consolidated as the Olympic field; Keokuk and North Keokuk pools in northern Seminoie County were consolidated; the area around section 9-12-5, Lincoln County, was named South Wilzetta pool.

In Kansas, the Warkentine and Herzler pools in Townships 22 and 23-2w were merged to form the Halstead field; Alberta Johnson pool was joined with the Theede pool, this area being in Township 21-7w, between the Hauschild and Saxman areas in Rice County; Harbaugh pool was made part of the Big Chief pool in sections 30 and 31-14-14w and sections 25 and 36-14-15w, Russell County; Holcomb was included in the Wakeeney field, in sections 10, 11, 14, 15 and 26-11-23w, Trego County; Showalter pool was made part of the Graber pool in Township 21-1w and NE section 6-22-1w, McPherson County; Thompson pool was joined with Aldrich pool in sections 7-18-25w and 13-18-26w, Ness County; Becker pool was joined with Heiken pool, in sections 23, 24, 25 and 26-17-10w, Ellsworth County; Otis South pool was joined with Otis field, eastern Rush County; Atherton South pool in sections 31 and 32-13-14w, was changed to Balta pool.

George A. Schwab, Barnsdall Oil Co., is chairman of the Oklahoma committee; L. W. Kessler, Sinclair Prairie Oil Co., is chairman of the Kansas committee.

Search for Carbon Dioxide Gas

The hunt for carbon dioxide gas in New Mexico is being pursued in various counties, and a dry ice plant is nearly completed in Harding County. Western Freezit Co. of Denver, Colo., has its building up in Bueyeros, Harding County, and was moving in a compressor last week.

Chief Oil & Gas Co. is drilling in the SE quarter of section 12-6n-7e, Torrance County. Quaker State Oil Co. of Pampa, Tex., has started a test in SE NE section 11-19n-21e, in Mora County, and if it is successful the company plans to build a dry ice plant near the Santa Fe Railway.

Adams & McGaha No. 1 Gonzales, SW SW section 28-21n-30e, Harding County, is drilling below 1,000 feet; Axelrod & Miller No. 1 Beller, SW SE section 1-20n-31e, Harding County, has started drilling, and Law & Eckhart No. 1 Gallejos, C NW section 27-17n-30e, Harding County, is also on the way down. Head & Miller No. 1 DeBaca, SE NE section 31-20-31, Harding County, is drilling. All are carbon dioxide tests.

OBITUARIES

FRANCIS EDWARD DONNELLY, 32, vice president, Eastland Oil Co., Fort Worth, Tex., died at a hospital in that city following an illness of five years.

E. W. PRESTON, Humble Pipe Line Co., Sonora, Tex., died from injuries in an automobile accident near that city.

JOHN E. TEMPLETON, 83, pioneer oil operator, of Warren, Pa., died at his home in Tiona, Pa. He had become one of the foremost oil producers of that section during his residence of over 50 years.

GEORGE C. PARTRIDGE, 76, died in Tulsa on Saturday, April 10. Mr. Partridge started in the oil business at 15 years of age and followed it for nearly 50 years as a driller, contractor and producer in Pennsylvania, Ohio, Illinois and the Mid-Continent. He was one of the crew that drilled the discovery well in the Robinson field in Illinois. Mr. Partridge retired in 1925 on account of ill health.

Pipe Line Activity

Gulf Coast Construction

HOUSTON, Tex.—Contract for an 8-inch welded loop line, from the Lafitte field in Jefferson Parish to storage facilities near New Orleans, will be let by Texas Pipe Line Co. This will loop the 16-mile 6-inch oil line laid last year.

Old Ocean Gas Co., of Houston, Tex., is nearing completion on its 13-mile 6-inch welded gas line from the Old Ocean field in Brazoria County to the Clemens Dome in Matagorda County. The line will furnish fuel to Jefferson Lake Oil Co.

Williams Bros. Corp., of Tulsa, is scheduled to start construction April 15 on Barnsdall Oil Co. 70-mile 6-inch welded oil line from the Placedo field in Victoria County to the refinery site at Corpus Christi. Construction will start at the Corpus Christi end.

Gulf Pipe Line Co. is taking up 15 miles of 6-inch screw line from Sandy Point field, and relaying it from Houma to Elizabeth, Terrebonne Parish.

Continental Kansas Extension

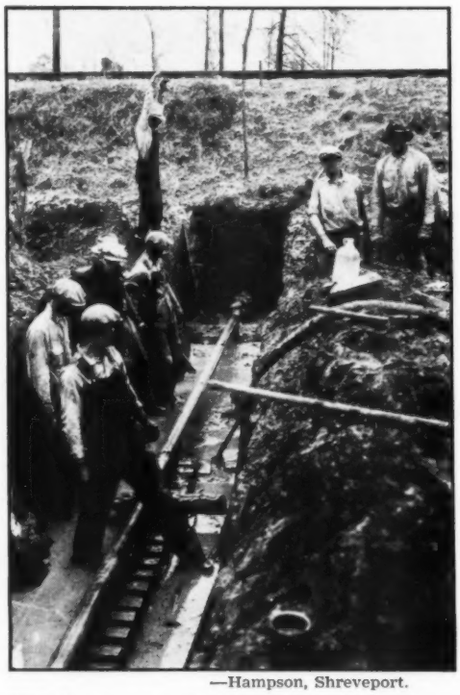
Construction work will begin immediately on a 37-mile pipe line extension in Kansas and erection of a power plant at Moundridge, Kansas, by Continental Oil Co. The new 8-inch line will extend from the Geneseo pool in Rice County to the Ainsworth pool near Stickney. Continental has an interest in more than 14,000 acres within a six-mile radius of the terminus of this line. Capacity of the Moundridge gas-electric plant will be 800 kilowatts, generated by three 400-horsepower gas engines. The new unit will provide power for Continental's pipe line, production and drilling operations in the Graber pool.

Ector and Andrews Lines

FORT WORTH, Tex.—Humble Pipe Line Co., which had a 6-inch line out of the Cowden field in northern Ector County up through the Fuhrman and Ogden fields and into the Means field in Andrews County, is laying 18 miles more of 6-inch from the Cowden field to connect with the other line at a junction south of the Means field, which will give that field a direct outlet to Ector County and more capacity.

Humble is also laying about 20 miles of 8-inch line from the Penn field in southern Ector County to connect with the Goldsmith field, which will make the third line in this field when Shell Pipe Line Co. finishes its line. At present Gulf's pipe line division is the only company having an outlet. Shell is expected to extend this line later into Andrews County where Shell recently brought in a well just north of the Fuhrman field. It is also paralleling its Penn-Cowden 6-inch line with an 8-inch line.

THERE SHE COMES!



—Hampson, Shreveport.

Withdrawing horizontal drill from railroad grade after boring hole for pipe line

Simrall to Increase Capacity

MUSKEGON, Mich.—Simrall Pipe Line Corp., one of two major purchasers in the new Buckeye, Gladwin Township, field, has announced plans for increasing the capacity of its 6-inch line from 8,000 to 11,000 bbls. a day and eventually to 16,000 bbls., if required. Completed less than three weeks ago, at a cost of about $40,000, the new line already is taxed to its original capacity of 8,000 bbls. Additional pumping equipment will be installed, it was announced by W. L. Davis, vice president.

Refinery Projects

Will Build New Unit

HOUSTON, Tex.—Foundations have been completed and steel construction begun on the new 15,000-bbl. crude distillation unit at the Port Arthur refinery of the Texas Co. The unit was designed by the E. B. Badger & Sons Co. and is being constructed under supervision of Badger engineers. The unit comprises atmospheric and vacuum stage equipment, to be used in connection with other distillation units in operation at the refinery.

Plant Nearly Completed

HOUSTON, Tex.—Final details are being completed on the new 20,000-bbl. refinery of the Atlantic Refining Co. at Atreco, Tex. The plant, under construction by the W. M. Kellogg Co., will be operated by Atlantic men from the Franklin, Pa., and Brunswick, Ga., refineries of the company, which have been closed. Circulation in the new plant is expected to begin late this month.

The new refinery includes a thermal polymerization unit, in addition to the complete equipment for manufacture of high-octane cracked gasoline, furnace oils and fuel oil.

Leonard Unit Completed

ALMA, Mich.—The newly-completed Dubbs cracking unit of Leonard Refineries, Inc., is definitely scheduled to go into operation April 15, according to John F. Martin, general manager. The unit, with a rated capacity of 1,100 bbls. daily and an estimated actual capacity of 1,400 bbls. daily, will enable the company to add to its list of products a high octane gasoline of premium quality. The company is also building an ethyl plant, under license from the Ethyl Gasoline Corp.

Addition of the cracking unit will increase the processing capacity of the plant to upwards of 4,400 bbls. of crude oil daily, and capacity operation of both the topping and cracking units is expected to continue for some time. The 3,000-bbl. skimming and topping unit has been operating at peak capacity for the past 45 days, Martin reported.

Gulf Iso-Octane Plant

PORT ARTHUR, Tex.—The Gulf Oil Corp., is now completing plans for the construction of an

Replacement and Looping Program Announced by Great Lakes Pipe Line Company

The directors of Great Lakes Pipe Line Co., have approved a program of construction that will give this unit a more efficient and flexible operation. Shippers have always demanded that their respective gasoline not lose identity in the system. The growing diversity of specification does not permit the present operation to function to the satisfaction of those tendering gasoline both with respect to the number of grades transported and the volume which the pipe line can handle. It has been the experience of all gasoline pipe line carriers that within a few years after the beginning of operations approximately 15 per cent to 20 per cent of the original capacity of the lines is lost because of the drying action of the gasoline roughening the inside walls of the pipe thus increasing friction losses and decreasing throughout. It is understood that Great Lakes has lost 18 per cent of its original capacity in this manner.

Great Lakes plans to replace between Osceola, Iowa and Omaha, Nebraska, 100 miles of 4-inch pipe with pipe 6 inches in diameter, to parallel its present 8-inch line between Barnsdall, Oklahoma, and Kansas City, Kansas, with a line similar in size, and to construct a 6-inch loop between Des Moines, Iowa, and the Twin Cities. Only one pumping unit will be installed on each of the latter two lines while two pumping stations on the Omaha line will be abandoned.

The additional facilities will not increase the present capacity of the system materially and will, in fact, reduce the load factor under which the company is now operating. It is reported from sources which are considered reliable that the combined loading of the eight shippers at the six pipe line terminals in 1936 represented 12 per cent of the total gasoline consumed in the ten states served by Great Lakes Pipe Line Co., during that year; also that in these same states last year total gasoline consumption increased 10 per cent over 1935 compared to an increase from the pipe line terminals of 7 per cent in shipments in 1936 above the prior year.

Included in the group of companies participating in the use of the Great Lakes system are Continental Oil Co., Barnsdall Refining Corp., Skelly Oil Co., Pure Oil Co., Mid-Continent Petroleum Corp., Texas Co., Sinclair Refining Co., and Phillips Petroleum Co. The Great Lakes system connects with refineries operated by members of the group at Okmulgee, Barnsdall, Muskogee and West Tulsa, Oklahoma and at Eldorado, Kansas. The terminals are located at Kansas City, Des Moines, Omaha, Chicago and Minneapolis.

iso-octane plant to be installed at the Port Arthur, Texas refinery of that company. Although details have not yet been worked out, nor contracts awarded, the plant will have a capacity of about 2,000 bbls. per day of raw stock.

The synthesis being considered for the new unit is the conversion of di-iso-butene by direct synthesis to iso-octane. It is expected that plans for the new plant will be drawn up in the near future, and awarding of contracts and construction will follow shortly.

The Gulf Oil Corp. has recently let contract to the Lummus Co., of New York for construction of a 3,000-bbl. vacuum lube rerun unit at Port Arthur. A similar unit was just completed by that company also at the Port Arthur refinery, having a capacity of 1,000 bbls. The construction of the new rerun unit will begin immediately. Meanwhile, Gulf engineers are engaged in considerable revamping of existing equipment at the Port Arthur refinery, and have completed an addition to their steam generation system at the plant.

Natural Gas

Gas Measurement Course

The thirteenth Southwestern Gas Measurement Short Course is scheduled to be held at University of Oklahoma, Norman, Okla., April 20, 21 and 22. This school will follow closely the program developed with morning sessions held in the auditorium of the College of Engineering Building for the discussion of subjects of general interest. These general sessions will be handled by members of the faculty of the College of Engineering and gas company men, except classes on fundamental principles, which will be conducted by engineers from the manufacturing companies.

The afternoons will be taken up with class work on special subjects, conducted by members of the faculty of the College of Engineering and gas company employes, and several types of equipment will be analyzed and explained by representatives of the equipment manufacturers.

A registration fee of $3 is charged covering admission to the school, lefax copies of Practical Methods report for current year, a general bulletin for current year and ticket to banquet. Further information may be obtained from Prof. W. H. Carson, University of Oklahoma, Norman, Okla.

To Build Gas Purifying Plant

Cities Service Gas Co., Bartlesville, Okla., has been licensed by the Girdler Corp., Louisville, Ky., to build and operate a Girbotol process plant near Lyons, Kansas for the removal of hydrogen sulfide from natural gas. The plant will purify 10,000,000 feet of gas per day for distribution to domestic and industrial consumers. The hydrogen sulfide content of the gas will be reduced from 135 to less than 1 grain per 100 feet.

Llano Franchise

A natural gas franchise was granted Public Service Corp. of Texas by the city council of Llano, Texas, the past week. A franchise for San Saba previously had been approved by the city council. Thomas Cook, vice president of the corporation, of Fort Worth, said his company proposed to lay a pipe line from the Hamilton County gas field to provide gas for the central Texas towns of Llano, San Saba, Goldthwaite, Lometa and Lampasas, providing a survey now being made indicates sufficient probable consumption to justify the line. It will require an investment of approximately $350,000, he said. The Llano franchise was conditional upon acceptance within 30 days by the corporation.

Natural Gasoline

Award to Feature Convention

An annual individual award for distinctive or meritorious service to the natural gasoline industry, offered by E. I. Hanlon, of Hanlon-Buchanan, Inc., Tulsa, is to be presented each year at the annual convention of the Natural Gasoline Association of America. While plans for the award are not yet completed the board of directors of the N.G.A.A. officially accepted Mr. Hanlon's offer at a recent meeting.

Specifically the award might be presented for constructive development or meritorious service concerned with:

1. Research of any kind calculated to stimulate a broader use of natural gasoline or liquefied petroleum products.
2. Manufacturing processes or equipment which would permit greater yield or more economical operation.
3. Test methods and procedure, creation of standards, delineation of specifications or advancement in laboratory technique.
4. Handling, storage or transportation of natural gasoline.
5. Marketing of products, gas contracting, accounting, public and industrial relations, safety developments and any business phase of the natural gasoline industry.

Tentative plans include the immediate solicitation of nominations from interested oil companies, institutions and organizations by the award committee. This committee consists of T. R. Goebel, president; William F. Lowe, secretary-treasurer, and J. W. Vaiden, chairman of the technical committee. A five-member advisory committee selected from the board of directors will aid the award committee in making its selection from the nominations submitted.

While the Hanlon award is to be administered by and presented under the auspices of the N.G.A.A., any individual whose service to the natural gasoline industry qualities him to receive it, is eligible and will be given every consideration.

Enlarging East Texas Plant

SHREVEPORT, La.—General American Oil Corp., of Texas, with headquarters in Shreveport, La., have begun enlargement of its Gladewater gasoline plant in the East Texas field from 5,000 to 12,000 gallons daily. Initial steps for this enlargement were taken by the purchase of the Chief Refining Co., plant and gas pipe-line gathering system, which included 100 well connections. With the Chief's connections, General American will then have about 300 connections to its Gladewater plant, but plans to extend its gas gathering system to include about that many more. Approximately $200,000.00 will be spent in this enlargement program, it is reported.

Continental Enlarging Plant

In order to keep pace with increased gas production available to the unit, officials of Continental Oil Co., Ponca City, Okla., have announced the proposal to increase the capacity of its gasoline plant and booster station located near Britton, Okla. The company recently purchased the plant from the Del Rey Production Co. Present daily capacity of the gasoline plant is 22,000,000 feet of gas with a daily gasoline capacity of 11,000 gallons.

Already under construction is a 350 horsepower diesel booster station at Orlando, Okla., and a gasoline plant in the Gillis field, 5 miles northeast of Lake Charles, La. Daily gas capacity of the Gillis field plant will be 9,000,000 feet, with a gasoline capacity of 6,000 gallons. The plant is located on the west side of the field on the Henry Powers tract.

Texas February Gas Production

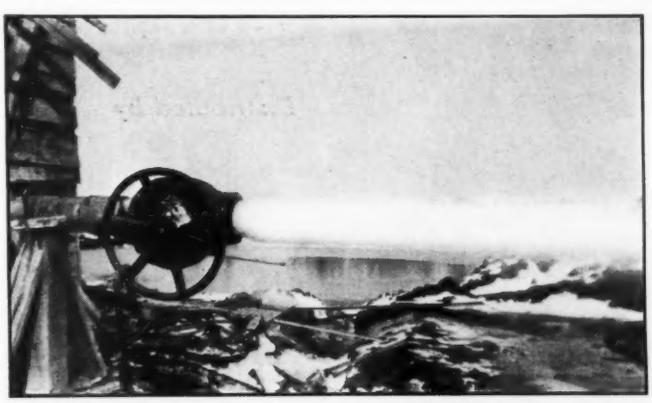
Due to seasonal conditions and a shorter month, there was a general decrease in dry gas production throughout Texas during February, according to the report of the Texas Railroad Commission for that month. This reduction was most noticeable in the amount of gas taken into pipe lines for fuel purposes. In some of the older fields where rock pressures are low, there was an increase over January due to lower pipe line pressures which permitted low-pressure wells to flow into the lines. In several districts the increased uses for lease operations and drilling purposes is an indication that general field activity for 1937 definitely started during February after the usual winter slow-down, the report stated.

Total dry gas production outside of the Panhandle amounted to 12,678,966,000 feet for the month as compared with 14,348,353,000 feet in January, 1937 and 12,747,675,000 feet in February, 1936. Production in the Panhandle district totaled 36,831,788,000 feet for the month as compared with 40,244,913,000 in January and 41,564,482,000 feet in February, 1936. Of the total amount produced during February, 49,510,574,000 feet, 34,850,942,000 feet were sweet gas and 14,659,812,000 feet sour gas.

The dry gas produced during the month was disposed of as follows: Light and fuel, 28,797,337,000 feet; gas-lift and repressuring, 1,260,336,000 feet; miscellaneous lease operations and drilling, 1,154,896,000 feet; and to gasoline plants 18,298,185,000 feet.

Production of natural gasoline declined slightly during the month; 53,677,484 gallons being produced in February as compared with 54,855,368 gallons in January. The volumes of gas processed during the month were as follows: Casinghead gas, 24,131,464,000 feet; sweet gas, 18,869,172,000 feet and sour gas, 13,746,880,000 feet. An average of .95 gallon of gasoline was extracted per 1,000 feet of gas processed.

Carbon black production showed a slight increase during February.



BLOWING GASSER—*Cleaning salt water out of a 47,000,000-foot Kansas gas well*

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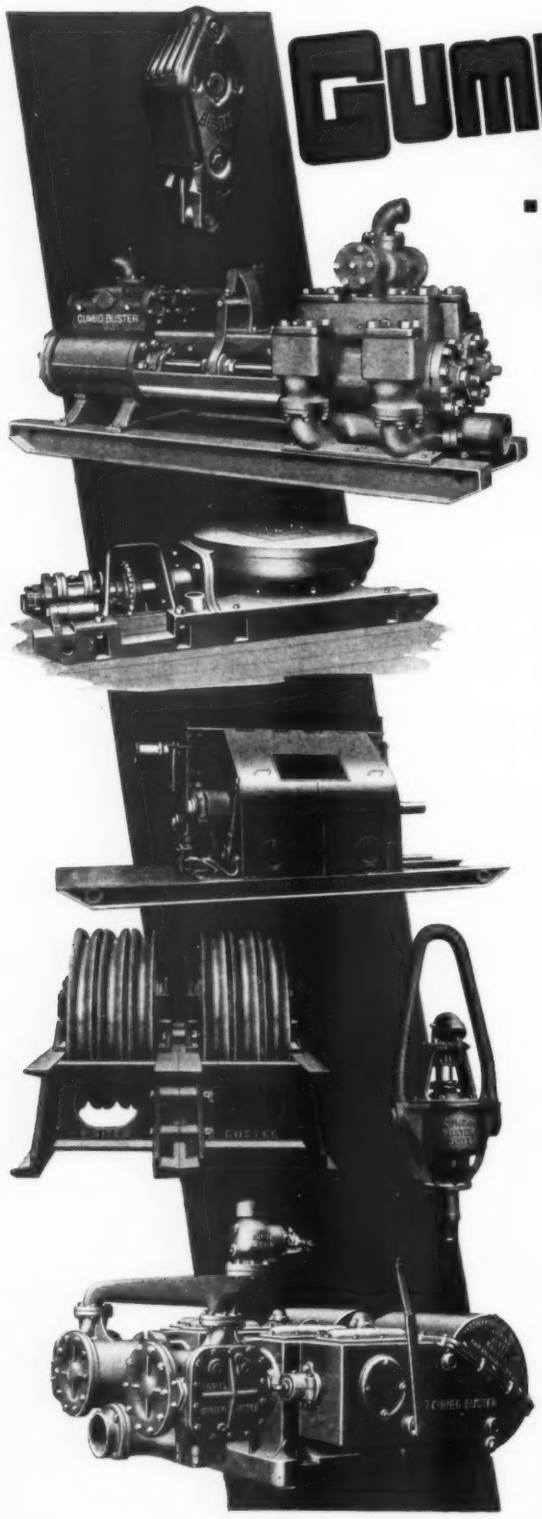

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Petroleum Situation Summary

The daily average crude production in February, 1937, according to the Bureau of Mines, was 3,327,600 bbls. This exceeded previous records by a wide margin, being 148,000 bbls. above the previous high of January, 1937, and nearly 500,000 bbls. in excess of the average of February, 1936. The increase in production far outweighed a material decline in imports. The demand side showed comparatively little change, the net result being the addition of large quantities to storage. Crude oil stocks increased 3,213,000 bbls. in February compared with a decline of 1,425,000 bbls. in January.

The yield of gasoline was 45 per cent, compared with 43.2 per cent in January. This material increase probably reflects the lessening of anxiety regarding the supply of light fuel oils.

The indicated domestic demand for motor fuel in February was 32,000,000 bbls., or 18 per cent above the figure for a year ago. This unusual increase reflects chiefly the difference in weather conditions in the two months. In this connection, it is noted that about 1,300,000 bbls. less gas oil and distillate fuel oil were used than in February, 1936.

COMPARISON OF TWO MONTHS' DATA

Supply and Demand—Crude Oil (Bbls.)

Two months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Feb. 28
1937	193,472,000	191,684,000	*1,788,000	*0.9	191,740,000	1,732,000	184,311,000	7,373,000	289,972,000
Daily average	3,279,000	3,249,000	*30,000	.....	3,250,000	29,000	3,124,000	125,000	.....
1936	175,441,000	179,260,000	3,819,000	2.2	170,940,000	4,501,000	172,719,000	6,541,000	310,812,000
Daily average	2,924,000	2,988,000	64,000	.....	2,849,000	75,000	2,879,000	109,000	.....
Increase, 1937	18,031,000	12,424,000	.....	....	20,800,000	†2,769,000	11,592,000	832,000	†20,840,000
Increase, 1937	10.3%	6.9%	.....	....	12.2%	†61.5%	6.7%	12.7%	†6.7%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

Two months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Feb. 28§
1937	86,739,000	71,314,000	*15,425,000	*21.6	86,739,000	.....	65,696,000	5,618,000	82,703,000
Daily average	1,470,000	1,209,000	*261,000	....	1,470,000	.....	1,114,000	95,000	.....
1936	78,802,000	63,868,000	*14,934,000	*23.4	78,802,000	.....	59,628,000	4,240,000	76,148,000
Daily average	1,313,000	1,064,000	*249,000	....	1,313,000	.....	994,000	70,000	.....
Increase, 1937	7,937,000	7,446,000	.....	....	7,937,000	.....	6,068,000	1,378,000	6,555,000
Increase, 1937	10.1%	11.7%	.....	....	10.1%	.....	10.2%	32.5%	8.6%
Two months—			**Kerosene**						
1937	10,789,000	10,979,000	190,000	1.8	10,789,000	.....	9,523,000	1,456,000	5,443,000
1936	9,206,000	11,337,000	2,131,000	23.1	9,206,000	.....	10,354,000	983,000	5,784,000
Increase, 1937	1,583,000	†358,000	.....	....	1,583,000	.....	†831,000	473,000	†341,000
Increase, 1937	17.2%	†3.2%	.....	....	17.2%	.....	†8.0%	48.1%	†5.9%
Two months—			**Gas Oil and Fuel Oil¶**						
1937	78,437,000	86,573,000	8,136,000	10.4	75,093,000	3,344,000	80,778,000	5,795,000	98,782,000
1936	75,335,000	82,434,000	7,099,000	9.4	73,279,000	2,056,000	76,814,000	5,620,000	96,885,000
Increase, 1937	3,102,000	4,139,000	.....	....	1,814,000	1,288,000	3,964,000	175,000	1,897,000
Increase, 1937	4.1%	5.0%	.....	....	2.5%	62.6%	5.2%	3.1%	2.0%
Two months—			**Gas Oil and Distillate Fuels**						
1937	24,599,000	29,107,000	4,508,000	18.3	24,525,000	74,000	25,428,000	3,679,000	18,211,000
1936	21,712,000	26,320,000	4,608,000	21.2	21,712,000	.....	23,645,000	2,675,000	15,322,000
Increase, 1937	2,887,000	2,787,000	.....	....	2,813,000	74,000	1,783,000	1,004,000	2,889,000
Increase, 1937	13.3%	10.6%	.....	....	13.0%	.....	7.5%	37.5%	18.9%
Two months—			**Residual Fuel Oils**						
1937	53,838,000	57,466,000	3,628,000	6.7	50,568,000	3,270,000	55,350,000	2,116,000	80,571,000
1936	53,623,000	56,114,000	2,491,000	4.6	51,567,000	2,056,000	53,169,000	2,945,000	81,563,000
Increase, 1937	215,000	1,352,000	.....	....	†999,000	1,214,000	2,181,000	†829,000	†992,000
Increase, 1937	0.4%	2.4%	.....	....	†1.9%	59.0%	4.1%	†28.1%	†1.2%
Two months—			**Lubricating Oils**						
1937	5,377,000	4,856,000	*521,000	*10.7	5,377,000	.....	3,281,000	1,575,000	7,463,000
1936	4,514,000	4,154,000	*360,000	*8.7	4,513,000	†1,000	2,916,000	1,238,000	7,385,000
Increase, 1937	863,000	702,000	.....	....	864,000	†1,000	365,000	337,000	78,000
Increase, 1937	19.1%	16.9%	.....	....	19.1%	†100.0%	12.5%	27.2%	1.1%
Two months—			**Petroleum Wax (Lbs.)**						
1937	87,770,000	89,392,000	1,622,000	1.8	83,440,000	4,330,000	48,221,000	41,171,000	109,012,000
1936	85,459,000	81,822,000	*3,637,000	*4.4	80,920,000	4,539,000	48,790,000	33,032,000	118,312,000
Increase, 1937	2,311,000	7,570,000	.....	....	2,520,000	†209,000	†569,000	8,139,000	†9,300,000
Increase, 1937	2.7%	9.3%	.....	....	3.1%	†4.6%	†1.2%	24.6%	†7.9%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished, unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments.

Crude Oil Run to Stills and Total All Oils (Bbls.)

Two months—	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline‡	Nat. gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils Feb. 28
1937	5,913,000	22,044,000	179,163,000	47.1	7,297,000	205,424,000	197,494,000	526,576,000
Daily average	100,000	374,000	3,037,000	....	124,000	3,482,000	3,347,000	.....
1936	7,734,000	19,014,000	167,299,000	45.9	6,849,000	185,883,000	184,339,000	543,244,000
Daily average	129,000	317,000	2,788,000	....	114,000	3,098,000	3,072,000	.....
Increase, 1937	†1,821,000	3,030,000	11,864,000	....	448,000	19,541,000	13,155,000	†16,668,000
Increase, 1937	†23.5%	15.9%	7.1%	....	6.5%	10.5%	7.1%	†3.1%

*Total all oils includes crude and refined products, natural gasoline and benzol. †Decrease. ‡Includes natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

"Old Timers" Association Formed by Texaco Men

HOUSTON, Tex.—Officials and employes of Texas Co. living in the vicinity of Houston who have been in continuous service 25 years or more were honored at a banquet April 7, the thirty-fifth anniversary of the company. Eighty-four "Old Timers" were present, representing a service record of 2,293 years and 29 days, an average of 28½ years per man. A permanent association of 'Old Timers," was organized. Officers elected were: V. R. Currie, president; M. C. Van Gundy, V. L. Porter and C. W. Redman, vice presidents; P. A. Angenend, secretary; and A. R. Megarity, treasurer.

Among special guests were W. S. S. Rodgers, president, New York, and J. H. Lapham, director and member of the executive committee, San Antonio. Special honor was paid to T. J. Donoghue, executive vice president, Houston, one of the two surviving members of the original group associated with the Texas Fuel Co., predecessor of Texas Co., who still are in the company's service. J. C. Colligan of Port Arthur, the other surviving member, was unable to attend.

Silent tribute was paid the late J. S. Cullinan, founder of Texas Fuel Co., and first president of Texas Co.

Mr. Donoghue, when called upon for a speech, traced the history of the company from the inception of the old Texas Fuel Co.

V. E. Currie, supervisor of the personnel department, served as toastmaster. Mr. Rodgers in an impromptu talk called himself a "newcomer," having been with the company only 21 years.

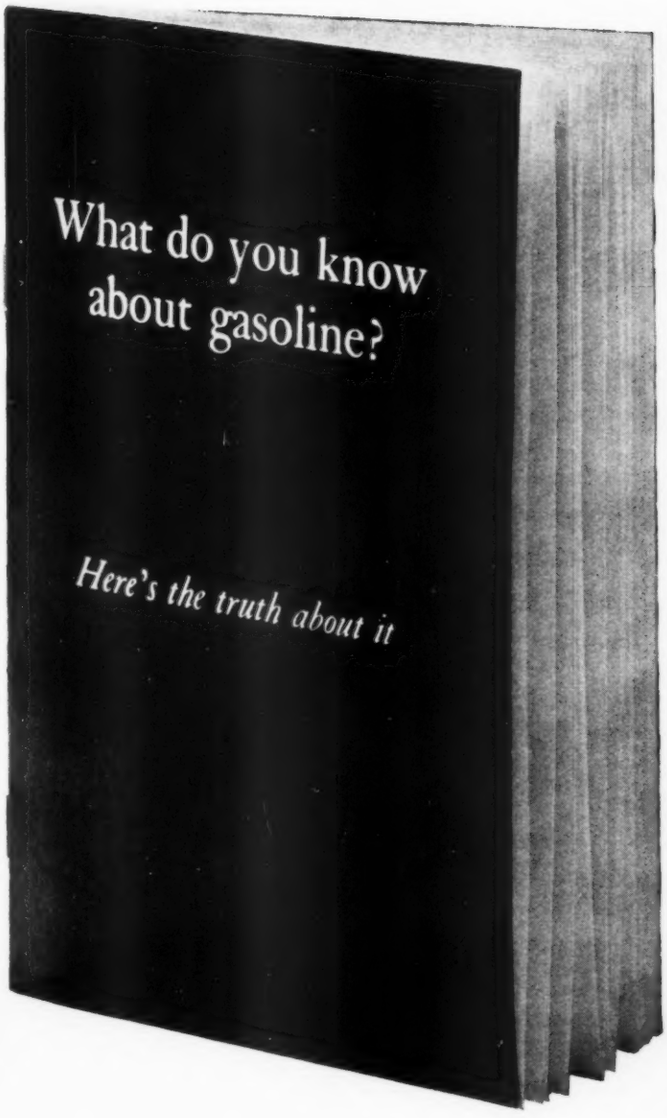
"Old Timers" from the Houston vicinity present included T. J. Donoghue, Guy Carroll, W. L. Wright, Ira McFarland, A. M. Donoghue, P. C. Scullin, C. E. Pratt, R. G. Dawson, C. J. Giezendanner, C. W. Bewley, B. E. Hull, R. J. Daniel, R. J. Topliffe, J. L. Adams, J. H. Borchers, V. R. Currie, R. B. McLaughlin, E. H. Catlin, J. A. Bartlett, E. M. Coleman, B. E. Emerson, L. D. Fletcher, A. R. Megarity, L. M. Fitzgerald, J. H. Wallace, E. L. Cullum, E. T. Junkins, H. J. Flake, O. Hartung, M. C. Van Gundy, R. F. Irvine, G. L. Noble, J. E. Horrigan, T. J. McMahon, A. S. Bailey, W. R. Ellwood, O. M. Looper, Joe A. Fryou, J. B. Duke, B. L. Kowalski, L. E. Barrows, W. E. Leach, E. E. Schreck, W. B. Williams, T. J. Hester, H. C. Selke, T. N. Dawson, St. C. B. Byrne, G. W. Foster, J. F. White, H. G. Shook, E. J. Schiller, W. O. Crain, George Ludwig, O. H. Matthews, J. S. Moss, C. I. Voss, J. F. Tietze, P. A. Angenend, F. C. Jones, C. A. Greaner, W. E. Green, C. W. Geiger, C. T. Morse, S. E. Monroe, M. H. Langford, W. B. Thurmond, J. B. James, John German, P. H. Burger, C. W. Redman, V. L. Porter, Will Peebles (Negro), J. W. Dieckert, W. G. Howland, R. W. Taylor, L. Livingston, J. Hemmi, J. W. Harmon, I. R. Cleveland, E. R. Davis, W. H. Lester, L. J. Larue.

"Old Timers" outside the Houston vicinity and special guests who have not had 25 years or more of continuous service at the banquet included: George M. Craig, president, Merchants National Bank, Port Arthur; W. H. Noble, assistant to manager of sales department, southern division, Dallas; R. C. Stewart, manager of Louisiana-Arkansas-East Texas division, Shreveport, La.; J. K. McGoldrick and H. L. Stewart, Tulsa; J. B. Haden, Dallas; O. R. Burden, Wichita Falls; J. B. Alleman, Ben Dennis, Guy Johnson, B. C. Walker, Joinerville; R. L. Layton, and P. J. Lauman, New Orleans, La.; R. L. Worden, Waco, Texas; Ernest Carroll, Sonora; M. K. Hunter, Palestine; P. W. Stone, Cleveland, Texas; T. J. Casbeer, Lampasas; A. E. Nauwald, Menard; F. G. Betzel, F. P. Dodge, F. L. Wallace, H. M. Snyder, P. H. LaGrone, E. O. Smith, E. R. Davis, J. M. Goodwin, C. R. Raup, Cliff Merwin, H. O. Preston, C. W. Horan, C. E. Yates and P. W. Gauss, Port Arthur; F. S. Dengler and Martin Wagner, Port Neches; Arthur Lefevre, F. J. Rousseaux, A. M. Johnson, J. S. Leach, C. B. Barrett, J. A. Birmingham, A. B. Patterson and E. M. Freeman, Houston.

Houston Industrial Franchise

HOUSTON, Tex.—A franchise to sell gas to industrial consumers within the city limits of Houston has been awarded to Channel Gas Corp., which will start construction of a 30-mile gas line from the Dickinson field in Galveston County. The Channel corporation, headed by H. C. Cockburn of Houston, entered into a contract with the city last year which provided the company would furnish the Magnolia Park system gas at 20 cents per 1,000 feet. When the contract was signed the company posted a cash bond and was given until February 1 to pipe gas into the Magnolia Park system. The company was unable to fulfill its contract at that time and after a 30-day extension, the contract was withdrawn and Channel Gas Corp., asked for a franchise to serve industrial consumers. The franchise was amended so the company will have to pay the city 2½ per cent gross receipts tax on all gas sold within the city.

Standing: Arthur Lefevre, editor of publications; A. M. Donoghue, manager of crude oil purchases and sales division; P. C. Scullin, assistant manager, refinery department; W. H. Noble, assistant to manager of sales department, Southern Division, Dallas; E. M. Freeman, assistant to T. J. Donoghue, executive vice president; G. L. Noble, vice president; J. K. McGoldrick, Tulsa; J. S. Leach, manager sales department, southern territory; Fred Betzel, Port Arthur works; W. S. S. Rodgers, president, New York; V. R. Currie, supervisor, personnel department; T. J. Donoghue, executive vice president; George M. Craig, president, Merchants National Bank, Port Arthur; J. H. Lapham, director and member executive committee; B. E. Hull, president and manager, Texas Pipe Line Co.; F. P. Dodge, general superintendent, Port Arthur works; Ira McFarland, comptroller; Harry Preston, manager Texaco can plant, Port Arthur; L. E. Barrows, manager producing department; F. S. Dengler, superintendent Port Neches works; Guy Carroll, assistant treasurer



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Oil News from Foreign Lands

Italy's 1937 Petroleum Trade

Petroleum products' import quotas and production licenses covering 13,781,000 bbls., have been issued by the Italian government to provide for 1937 business. The total requirements likely will exceed the total figure since without exception no restrictions have been imposed on internal production of fuel oil.

Azienda Generale Italiana Petroli (A.G.I.P.), official government company, will be the largest single factor in Italy's petroleum trade during the current year, unless quotas and licenses are revised to change the original relationship with other private companies. However, the group classified as Italian independent companies is authorized to handle a slightly larger volume than A.G.I.P.

Authorization has been extended for importation of 4,882,000 bbls. of fuel oil. With no restrictions imposed on internal production of fuel oil this material will no doubt form a large part of the over-all petroleum business for the year.

Licenses issued for internal production will regulate importation of crude, but no specific mention is made of the raw material.

Import quotas and production licenses issued by the government to the various distributors and refiners in Italy are shown in the following tables, listed by companies:

AZIENDA GENERALE ITALIANA PETROLI

Products—	Imports	Production
Gasoline	49,000	850,000
Kerosene	248,000	194,000
White spirit		41,000
Gas and diesel oil	232,000	290,000
Fuel oil	1,132,000	(†)
Lubricating oil	81,000	42,000
Bitumen		169,000
Subtotals	1,742,000	1,586,000
A.G.I.P. total	3,328,000	

STANDARD OIL CO. OF NEW JERSEY

(Societa Americana pel Petrolio)

Gasoline	*962,000	128,000
Kerosene	*225,000	132,000
Gas and diesel oil	*547,000	61,000
Fuel oil	966,000	(†)
Lubricating oil	33,000	126,000
Bitumen		91,000
Subtotals	2,733,000	538,000
Standard total	3,271,000	

ROYAL DUTCH-SHELL

Gasoline	233,000	552,000
Kerosene	116,000	108,000
White spirit	57,000	
Gas and diesel oil	595,000	58,000
Fuel oil	866,000	(†)
Lubricating oil	133,000	
Subtotals	2,000,000	718,000
Shell total	2,718,000	

SOCONY-VACUUM OIL CO., INC.

Gasoline		587,000
Kerosene		101,000
Gas and diesel oil		221,000
Fuel oil	25,000	(†)
Lubricating oil		53,000
Bitumen		
Subtotals	25,000	962,000
Socony-Vacuum total	987,000	

"AGUILA," TRIESTE

Gasoline		238,000
Kerosene		78,000
White spirit		16,000
Gas and diesel oil		145,000
Fuel oil		(†)
Lubricating oil		70,000
Bitumen		73,000
Total		620,000

ITALIAN INDEPENDENT COMPANIES

Gasoline	696,000	102,000
Kerosene	167,000	46,000
White spirit	24,000	33,000
Gas and diesel oil	433,000	85,000
Fuel Oil	1,918,000	(†)
Lubricating oil	110,000	49,000
Bitumen		103,000
Subtotals	3,348,000	418,000
Independent total	3,766,000	

ALL COMPANIES

Gasoline	1,940,000	1,870,000
Kerosene	756,000	559,000
White spirit	81,000	90,000
Gas and diesel oil	1,807,000	639,000
Fuel oil	4,882,000	(†)
Lubricating oil	382,000	340,000
Bitumen		436,000
Totals	9,848,000	3,933,000
Combined totals	13,781,000	

*Includes Socony-Vacuum's internal production of gasoline, kerosene, gas oil and fuel oil, which will be diverted to Societa Americana pel Petrolio under a marketing management arrangement for 1937. †No restrictions.

Before 1937 is ended, Italy's internal refining facilities will be materially expanded by work now under way at Bari and Livaruo. While the two Italian plants under construction probably will not be available for service until late in the year they will exert important influence on quotas and licenses for 1938.

The construction now in progress at Bari and Livaruo is in addition to that completed at "Aquila's" refinery at Trieste, Italy, earlier this year. The "Aquila" 6,000-bbl. two-stage atmospheric and vacuum crude oil distillation unit and Edeleanu solvent plant was commissioned at Trieste in time for inclusion in the 1937 assignment of import quotas and production licenses.

Foster Wheeler Corp., New York and London, is now engaged in building the Livaruo and Bari installations for Azienda Nazionale Indrogenaizione Combustibli.

The A.N.I.C. plant at Bari has capacity of 7,000 bbls. daily. It consists of crude stabilization plant, distillation unit, treating plant, hydro and cracked distillate stabilizer, refinery vapor recovery plant, liquid butane unit and a hydro and cracked distillate rerun unit.

Work under way at Livaruo for A.N.I.C. consists of a 6,000-bbl. per day hydro and cracked distillate stabilizer and a refinery vapor recovery and liquid butane unit to handle 2,500,000 feet of gas per day.

Will Wildcat in France

Petroleum exploration is to be resumed in France with five or more areas definitely included in the program adopted by the French National Office of Liquid Combustibles.

Reports of the exploration program, transmitted to the U. S. Bureau of Mines, lists five separate areas in which work is to be resumed and give a summary of the activity proposed. The areas included and the work planned, follow:

Ariege—Drilling was resumed at Lavelauet after having been suspended several years ago through lack of funds and because of incompetent management.

Herault—Drilling in Castelnau de Buers, near Pezenas, has been carried on by the national office to about 580 meters "with favorable indications."

Pyrenees—The recent visit to this region of a geologist of the national office was followed by a favorable report.

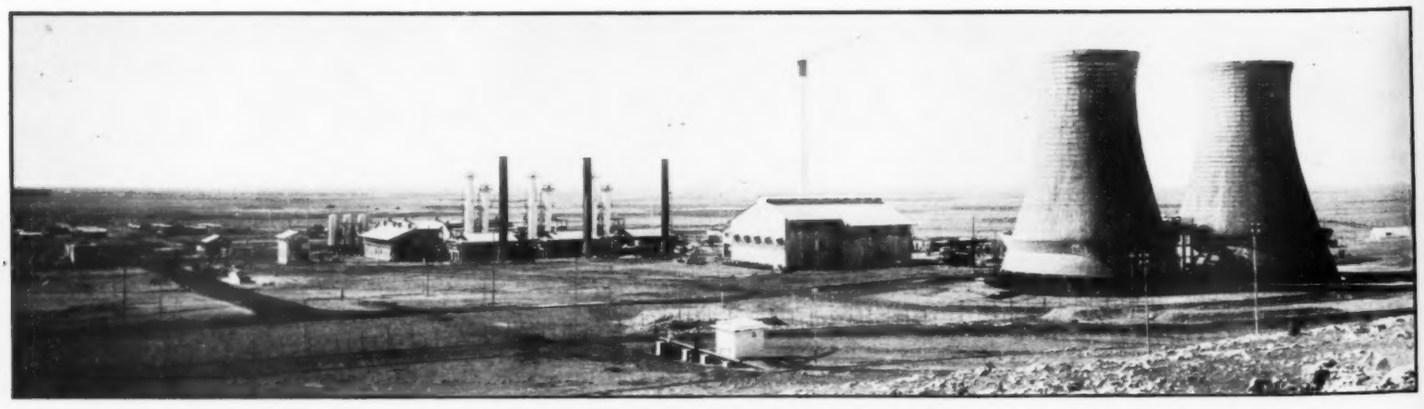
Savoie and French Jura—Only slight encouragement in the former district and deep drilling at Sainte-Colombes, near Pontarlier, have given no encouraging indications of petroleum deposits.

Swiss Jura—More satisfactory results were noted in this region. Drilling near Yverdon was halted at 830 meters by a mechanical failure. The drilling has been resumed in the Portlandian horizon where emissions of gas and traces of petroleum were found.

In further comment on the exploration program, Echo des Mines et de la Metallurgie relates that the commit tee is handicapped by lack of funds to conduct the necessary geological surveys preceding exploration operations.

Plans for Tripoli Refinery

Plans for the Italian petroleum refinery at Tripoli are gradually taking on more definite form, including assignment of its operation to the "Roman" (Raffineria d'Olio Minerale per l'Africa del Nord-Anonima), the industrial organization of the Azienda Commerciale Italiana Olii Minerali. Internal requirements of Libya are expected to be supplied from the "Roman" refinery. Officials fostering the refinery program contend that immediate benefit thereof will be felt by agriculture and industry as well as by the military and public services.



Stabilization plant at Kirkuk in the Iraq field

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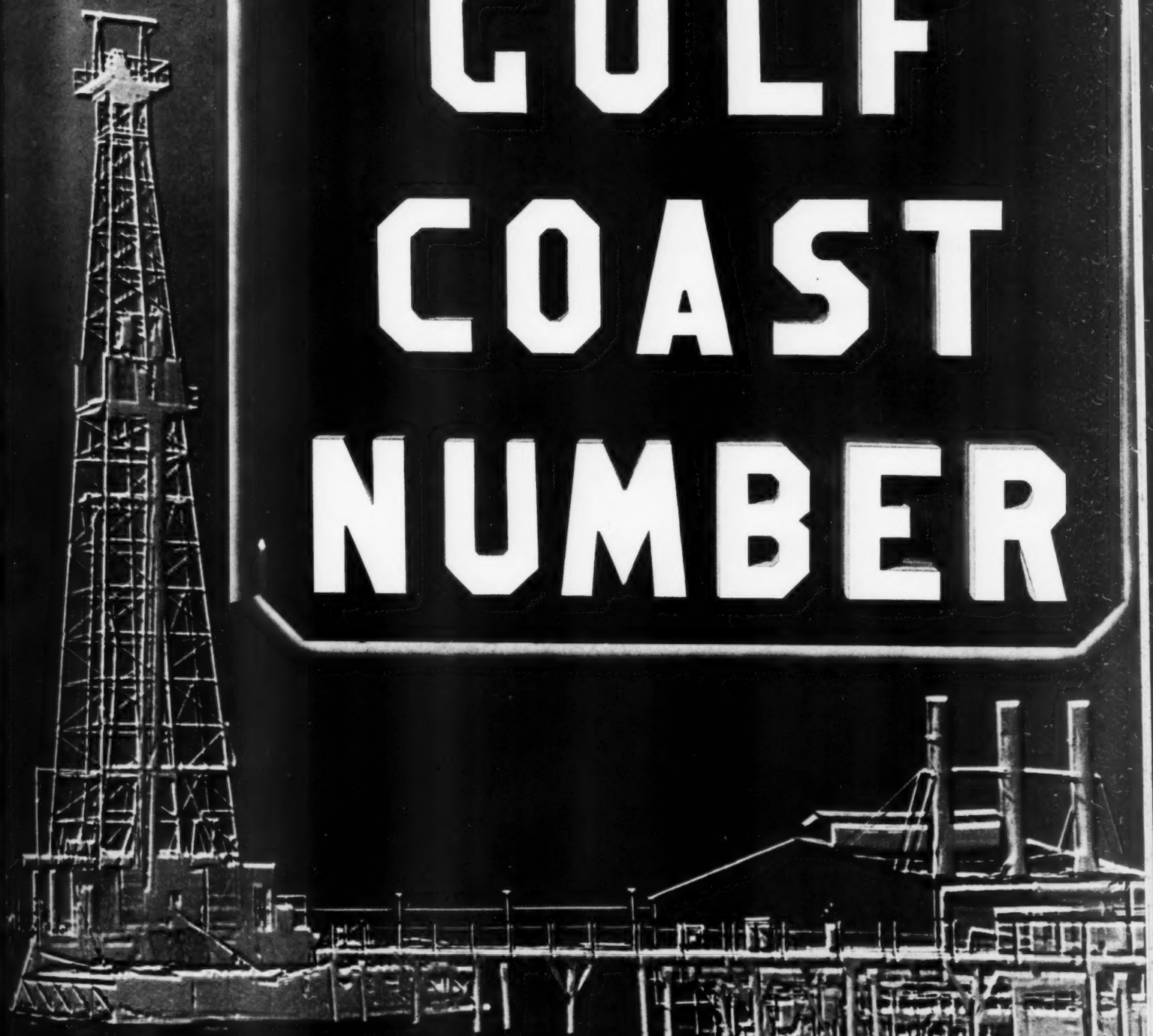
GULF COAST NUMBER



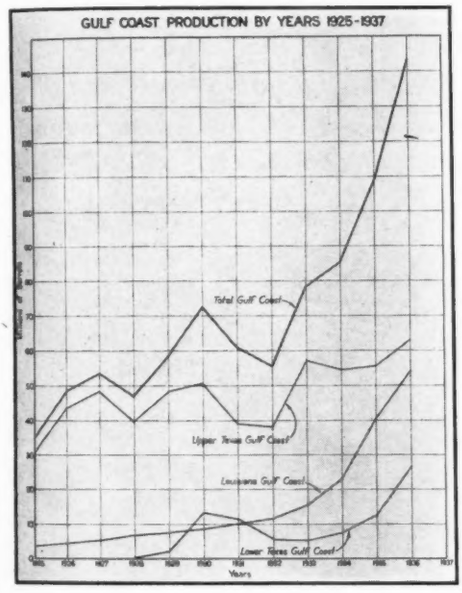
ENGINEERING

MAPS STATISTICS

Recent Development

Adding to Gulf Coast Reserve and Drilling Activity Increases

By NEIL WILLIAMS



HOUSTON, Tex.—Recent developments on the Gulf Coast have strengthened greatly the area's position as a petroleum reserve of extensive proportions. The list of fields has been swelled by continued additions. Production has maintained an almost unbroken trend to record levels. Exploration has revealed additional potentially productive areas. Reflecting this, estimates on recoverable reserves have been substantially boosted.

So far there has been no indication of a let-up in this development. A decided increase in general drilling activity has been undertaken within the past several weeks, covering not only existing fields but wildcat prospects. Although there has been some slackening of geophysical exploration, new concepts as to Gulf Coast structural conditions are opening the way for renewed exploitation for entirely different types of fields.

Fields on the Gulf Coast now total 215, including 93 in the Upper Texas Gulf Coast, 71 in the Lower Texas Gulf Coast and 51 in the Louisiana Gulf Coast. Of the 215 fields, 17 so far have produced only gas, leaving 198 which have been productive of oil. Not included are 20 proved salt domes, in the Louisiana and Upper Texas Gulf Coast region, which have not yet been found productive of oil, and numerous prospects on which the existence of production has been indicated but on which no commercial production has been opened. All salt domes generally are looked upon as potentially productive despite the fact a number have been exploited over many years without favorable results or indications.

Known salt domes are represented by 74 of the 215 oil and gas fields. Forty are in the Upper Texas Gulf Coast region, two in the Lower Gulf Coast, and 32 in Coastal Louisiana. Many of the remaining fields in the Upper Texas Gulf Coast area and the Louisiana Gulf Coast may be salt domes although drilling has not revealed the presence of salt. Most of the newer fields are deeply seated, and, if they are domes they are of the deeply seated, non-piercement type, in contrast to the piercement type of domes which characterized most of the older coastal fields.

Within recent months, 4 new salt domes have been proved. These are at Marchland, Lafourche Parish; Hester, St. James Parish, and Lake Mongouloi, St. Martin Parish, all in Louisiana, and Lamar, in Lamar County, Mississippi. The latter, the first salt dome found in Mississippi, marks extension of the coastal salt dome belt eastward. It is in the southwestern part of the state, not far from the Louisiana line. Its discovery has been an incentive for renewed interest in exploration of

TABLE 1—*NUMBER OF GULF COAST FIELDS BY YEARS

Year—	Louisiana Coast	Upper Texas Coast	Lower Texas Coast	Total Gulf Coast Fields
1901-24	(a) 9	(a) 24	(a) 1	34
1925	0	1	1	2
1926	2	2	(b) 1	5
1927	3	3	0	6
1928	3	3	(b) 2	8
1929	8	(a) 7	0	15
1930	1	1	(b-c) 13	15
1931	5	3	(c) 5	13
1932	2	(a) 6	(c) 3	11
1933	0	5	3	8
1934	6	10	(c) 8	24
1935	5	(a) 8	15	28
1936	6	(c) 17	15	38
1937	1	(a) 3	(b) 4	8
	51	93	71	215

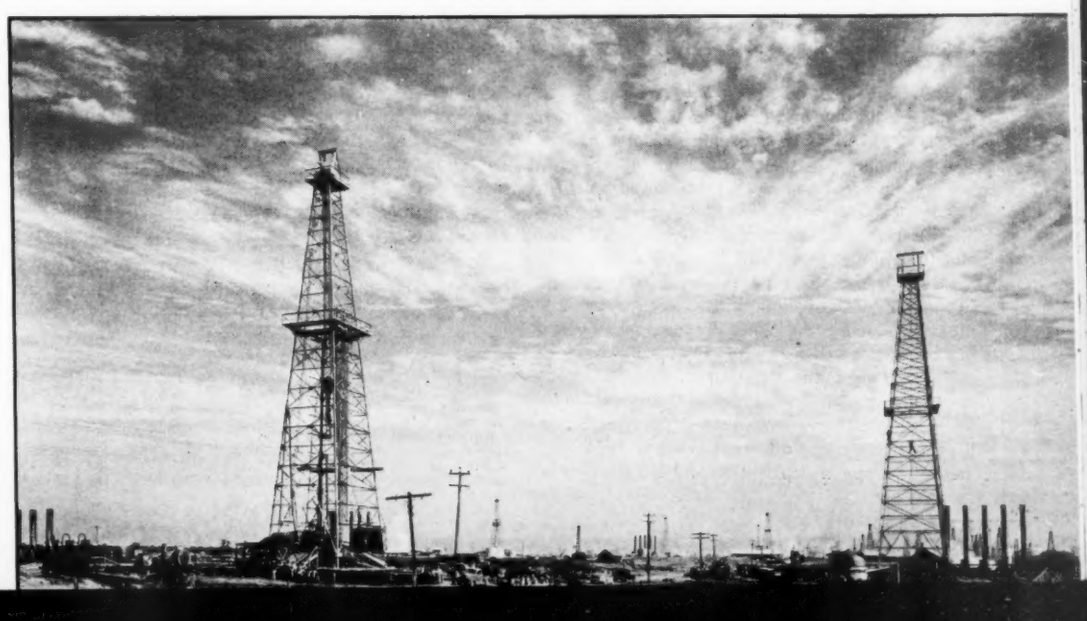
* Field discovery year based on year first commercial oil found, except fields which have produced only gas.

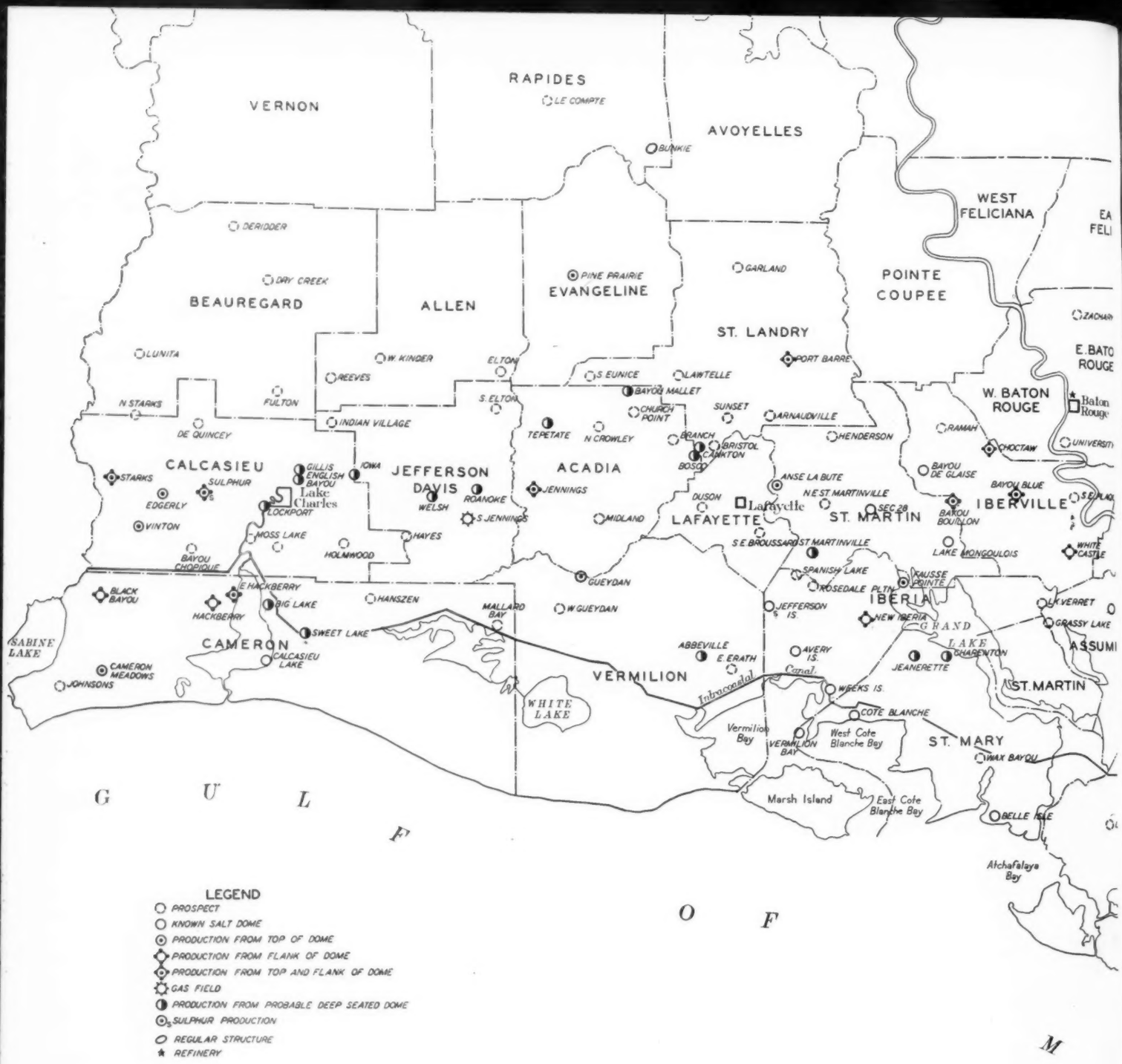
(a) Includes one gas field.

(b) Refugio, listed as 1928 oil discovery in Lower Texas Gulf Coast, opened for gas in 1920. Kingsville, listed as 1926 oil discovery Lower Texas Coast, productive of gas since 1920. Saxet, opened for oil in 1930, produced gas since 1923. Sandia, listed as oil discovery of 1937 in Lower Gulf Coast, produced gas since 1929.

(c) Includes two gas wells.

Deep sand development





Coastal Mississippi potentialities. The Lamar dome is of the shallow piercement type, characteristic of the original fields of the Louisiana and Texas coast.

Of the 215 fields on the Gulf Coast, 116, or more than half, have been opened for production within five years, or since 1932. Eight fields have been opened this year, and with Continental Oil Co. deep wildcat on the Abbeyville Prospect in Vermilion Parish, La., showing for a well, indications point to bringing in a ninth. These discoveries reflect the widespread geophysical exploration, wildcatting and development which have swept the Gulf Coast during that time. Previous geophysical work and wildcatting resulted in the discovery of numerous fields, but exploration generally was limited to specific or previously known types, namely the shallow, piercement salt domes. Since, with the discovery of different types of fields and domes, the scope of exploration and the interpretation of geophysical findings have been materially broadened.

The increase in the number of Gulf Coast fields is indicated in Table 1 which lists the number of discoveries by districts and years.

Daily production of the Gulf Coast in March was 513,927 bbls., or 147,081 bbls. greater than a year ago. It has increased 95,087 bbls. in the last three months, the daily average production for December, 1936, being 418,840 bbls.

Daily average production of the Gulf Coast by districts and months since January, 1936 (revised), follows:

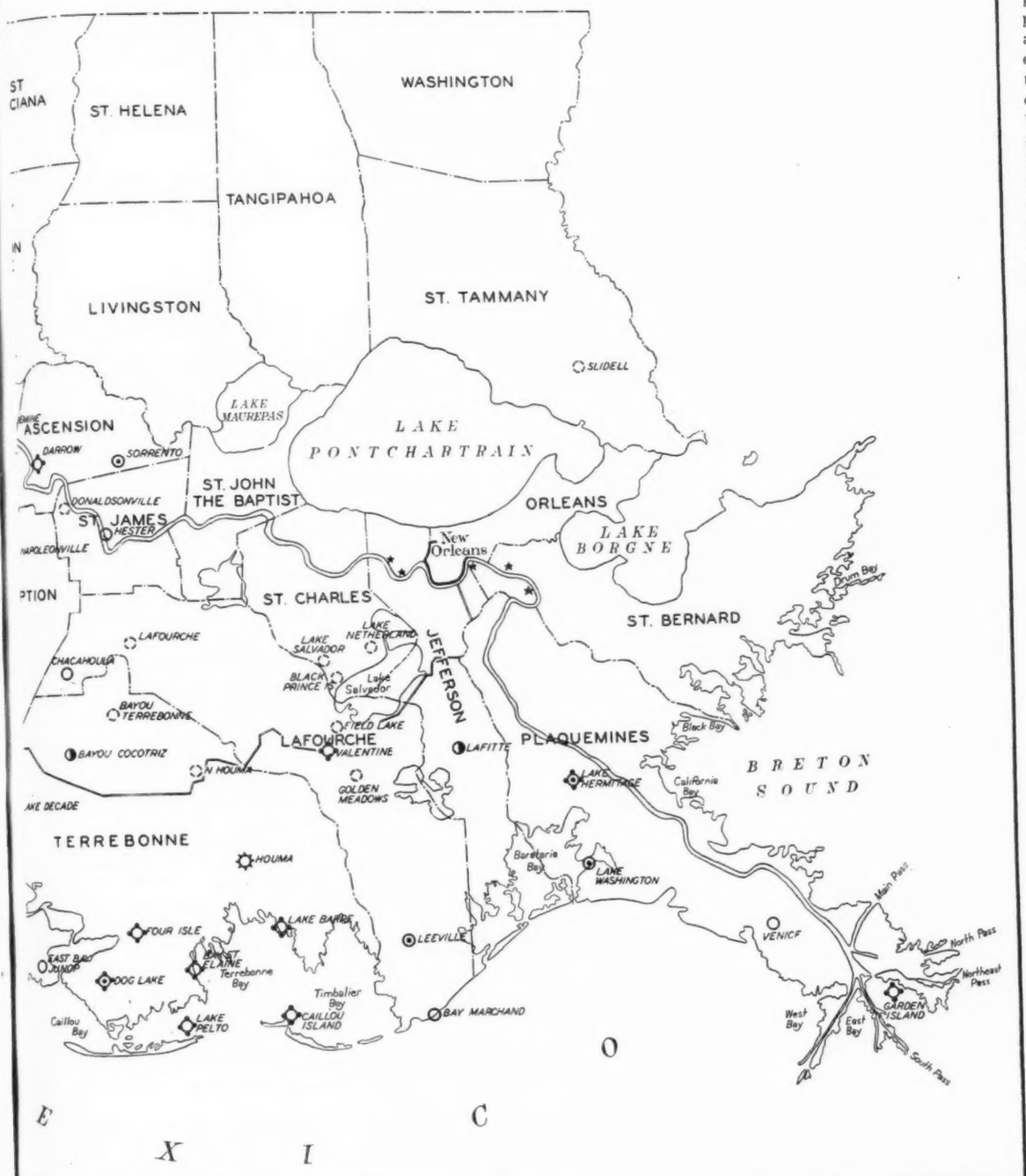
Month	Louisiana Coast	Upper Texas Coast	Lower Texas Coast	Total Gulf Coast
1936				
January	130,438	158,355	52,141	340,934
February	131,754	164,013	54,925	350,692
March	136,616	169,952	60,278	366,846
April	142,834	170,526	65,438	387,798
May	160,121	181,299	69,997	411,417
June	148,410	181,200	71,980	401,590
July	148,903	177,928	73,029	399,860
August	150,234	180,645	76,602	407,481
September	153,090	171,939	82,973	408,002
October	150,961	177,064	87,562	415,587
November	158,482	159,439	83,948	401,869
December	159,900	169,690	89,250	418,840
1937				
January	164,307	176,758	102,595	443,660
February	171,329	191,536	111,180	474,045
*March	177,880	210,290	125,757	513,927

* Daily average production for week of March 25.

In this increase, the output of the fields, limited to proration restrictions, in most instances does not reflect the ability of the fields to produce. It is known the majority of these fields are able to produce a number of times over their respective allowances without creating waste. The production figures, as they stand, indicate, in effect, proration allowables rather than the potentialities of the fields.

Total production on the Gulf Coast up to January 1, 1937, was 1,388,047,735 bbls. During the

LOUISIANA GULF COAST



past 10 years production has nearly tripled. Within the past five years it has nearly doubled.

The following tabulation records production by years:

Year	Louisiana Coast	Upper Texas Coast	Lower Texas Coast	Total Gulf Coast
1925	3,688,799	31,096,735	.....	34,785,534
1926	4,519,335	43,981,084	.....	48,500,419
1927	5,300,097	48,511,135	.....	53,811,232
1928	6,943,591	39,982,007	267,320	47,192,918
1929	7,534,566	48,497,263	2,188,472	58,220,301
1930	8,708,343	50,543,129	13,420,045	72,671,517
1931	10,090,095	39,077,990	11,922,682	61,090,767
1932	11,735,916	38,078,127	5,812,576	55,626,619
1933	15,349,883	57,073,462	5,542,556	78,265,901
1934	23,217,735	54,665,622	7,706,321	85,589,678
1935	40,657,131	55,431,661	12,833,281	109,012,074
1936	54,057,795	63,182,412	26,497,637	143,737,844

Increases made by the Lower Texas Gulf Coast district and Coastal Louisiana are particularly outstanding. First oil production in the Lower Texas coastal area was not opened until 1928, except for small production at Kingsville, discovered in 1926, and at Piedras Pintas, opened in 1925. Neither field has yielded important production. Refugio, opened in 1928, generally is looked upon as the first Lower Gulf Coast oil field. It had been productive of gas since 1920, but oil was not opened until the latter date. In the same year small production was proved at Palangana, which has not been very prolific. During 1928, the first recorded productive year for the district, the total recovery was only 267,320 bbls. Since the opening of Refugio, additional fields have been brought in and production has been built up in substantial volume. With a total of 62 oil fields in the Lower Texas Coast district, recovery during 1936 was 26,497,637 bbls., double that of 1935.

Coastal Louisiana's development has been nearly as sensational. Up to 1927, only 10 oil fields and one small gas field (Houma) had been opened. Several of those fields had produced for only short periods and in small volume, and most of them were in the extreme southwestern part of the state, adjacent to the salt dome fields of Coastal Texas. Wildcatting and exploration over a great part of Coastal Louisiana had been limited, as up to 1927 most of the interest had been directed to the early big fields on the Texas side. During 1926 total production of Coastal Louisiana was only 4,519,335 bbls.

As a result of the advent of geophysics in 1925 and the first geophysical exploratory play a number of new fields were brought into the picture. However, it has not been until more recent years that the major development has taken place, resulting in rapid building up of production. At the close of 1936, a total of 49 oil fields had been found, although several were not producing at the time, and recovery was 54,057,795 bbls. One more field has been opened this year.

For the week ended March 25 there were 7,434 producing wells in the three divisions of the Gulf Coast, including 4,671 wells in the Upper Texas Gulf Coast, 1,847 wells in the Lower Texas area, and 916 in Coastal Louisiana, a total increase of 304 wells in less than three months.

At this time 453 rigs are running in the district, an increase of 42 since February, and 45 since January. A year ago only 308 rigs were running.

Some of this increased drilling has been occasioned by the extension of development of several of the larger fields into subdivided acreage. Among these fields are Amelia, Hastings and Dickinson, where recent extensions have been brought in additional operators.

Twenty-six fields on the Gulf Coast have produced in excess of 10,000,000 bbls. each up to January 1, 1937. Of these 15 had produced in excess of 25,000,000 bbls.:

Field—	Production to January 1, 1937	*Daily prod. March 25
Spindletop	124,349,565	2,229
Humble	119,878,191	3,285
Hull	81,949,530	6,132
Sour Lake	76,905,169	1,554
Jennings	76,196,805	3,955
Goose Creek	72,981,331	2,721
Conroe	71,191,063	47,216
Barbers Hill	56,632,836	13,688
Vinton	43,557,626	1,437
Batson	37,367,564	1,850
Refugio	33,662,206	6,285
Orange	32,788,001	735
Pierce Junction	30,494,622	3,922
Saratoga	27,878,286	910
Liberty	27,357,487	560
Total	913,190,284	96,479

(Continued on Page 129)

Increased Drilling Speed in the Gulf Coast

By J. U. TEAGUE
Humble Oil & Refining Co.

The progress made in reducing the time required to drill and complete wells in the Gulf Coast area during the past few years is very encouraging. What would have been a record achievement on a well five years ago is now a routine completion. Table 1 shows the decrease in the time required to drill and complete an average well in two typical Gulf Coast fields since their discovery. One of these fields produces from a depth of 5,500 feet and the other from 7,000 feet. This remarkable record can be principally attributed to two factors:

(a) A planned program for developing the field.

(b) Improvement in drilling equipment and technique.

Planned Development

In the development of a field, especially where the operator has extensive holdings, special thought has been devoted to planning the field service facilities, namely: roads, water and fuel systems. It is essential that these be well planned and function smoothly, if a development program of any size is conducted in an efficient and economical manner.

In planning a road system it is necessary first to determine to some extent the trend of the field. After this has been done, a permanent road system can be constructed which will give access to all the wells to be drilled and later produced.

In fields having 20-acre well spacing, roads built along the section and half-section lines have proven satisfactory. This, of course, is not always possible due to the topography of the field or the diversified ownership of the leases. However, in some cases a workable system of roads has been worked out for an entire field by cooperation among the various operators in building their individual systems.

There are several types of road surfacing material used in the various fields. In fields near tidewater, shell has beeen found economical, while in those farther inland, an oiled or gravel topping might be more advisable.

A satisfactory road is provided by a 30-foot to 50-foot road bed with a shelled surface 12 feet to 16 feet wide. For very heavy traffic, the surfacing should be 9 inches to 12 inches thick. Roads of this type can be built in level country at an approximate cost of $5,000 to $6,000 per mile. A section of the permanent road system in use in one of the Gulf Coast fields is shown in Figure 2.

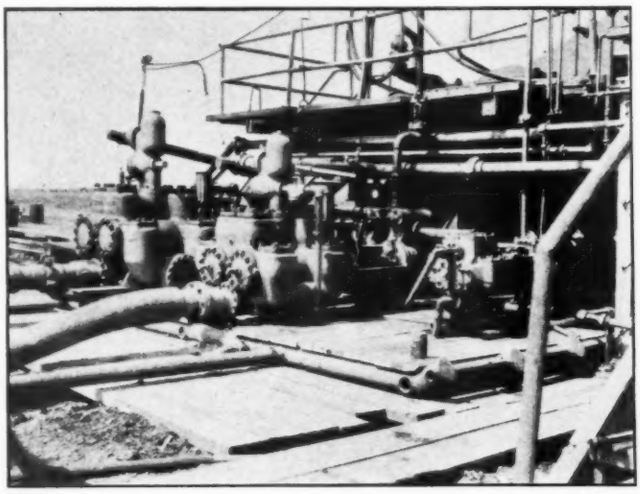


Fig. 4—Slush pumps and blowout preventer pump unitized on skids

In most cases a temporary board roadway from the permanent road system is built to the well location. The size of the board road depends upon the nature of the location it serves. On locations that are marshy, as shown in Figure 3, it materially speeds up moving in drilling equipment and servicing the well while drilling. Other locations require less floored space around the derrick. The roadways are of the simplest construction: two runners, made of two 2-inch by 10-inch timbers spaced far enough apart to accommodate both cars and trucks, are laid on 2-inch by 10-inch mud sills. In some cases a guard rail is built on the inside of the runners to keep the cars on them. After the well has been completed, the board road is taken up and moved to another location. The average life of these roads is 10 to 12 locations.

A well planned road system enables the operator to move equipment under all weather conditions with speed and a minimum of transportation facilities, particularly of the heavy-duty type.

In areas not naturally drained, it has been found advantageous to provide artificial drainage to care for the normal rainfall. The cost of these systems has in most cases been moderate and more than returned their cost by permitting uninterrupted field operating during the rainy seasons of the year.

Fuel and Water Systems

Of equal importance with the road system is the planning of adequate fuel and water systems to service the drilling rigs.

The design of these systems has of necessity depended upon the source of water and fuel supply. In most fields in the Gulf Coast, ample water

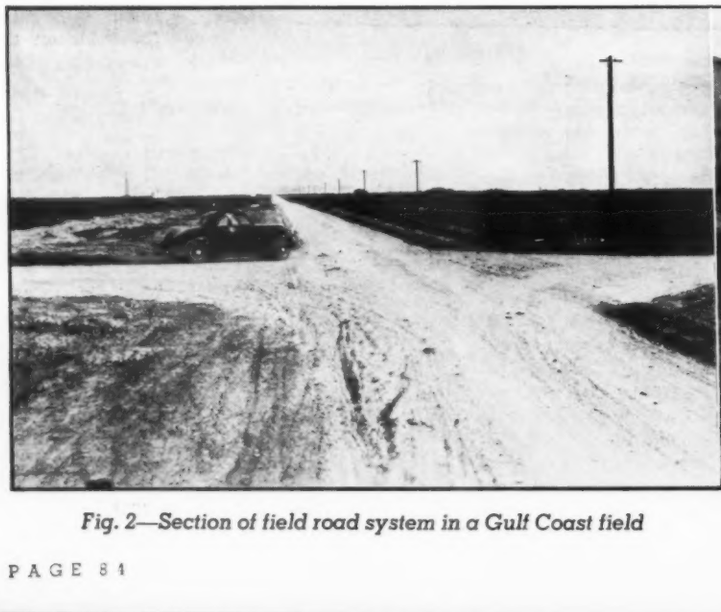


Fig. 2—Section of field road system in a Gulf Coast field

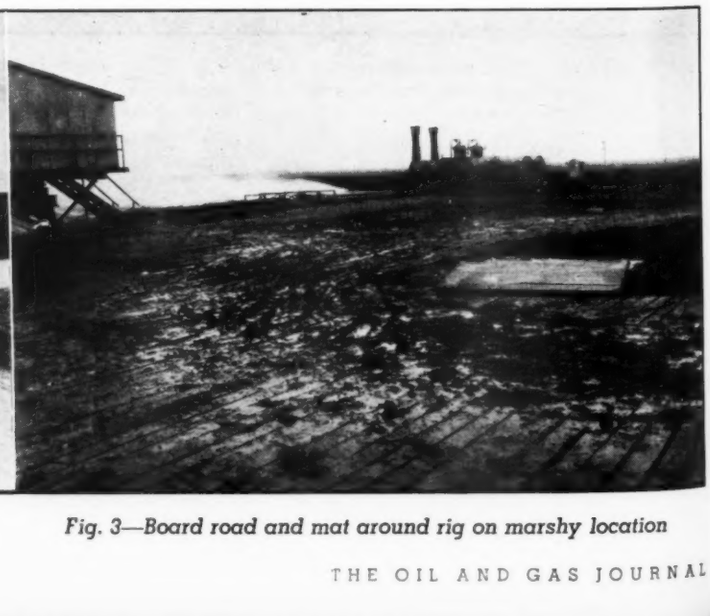


Fig. 3—Board road and mat around rig on marshy location

is obtained from wells of a comparatively shallow depth. However, in those fields very near the coast where fresh subsurface is not available, water can usually be obtained from irrigation canals. Natural gas is usually available either from the field itself, or from nearby gas lines, to use for fuel.

A satisfactory fuel and water system now being used by one operator in several fields under development consists of water and gas lines of 2½-inch pipe laid parallel to the permanent road system, along the section and half-section lines with outlets opposite proposed locations. As drilling progresses, farther from the source of water and gas supply, additional loops of the 2½-inch line are laid along the section and half-section lines to bring the system's capacity up to meet the drilling requirements. This system, besides having a low initial cost, is very flexible. As sections of the field are drilled up, the pipe, which is the size most widely used in field lines, is taken up and used to extend the system in another direction, or if not required for that purpose, for flow lines or other field utilities. In some instances, however, it has been necessary to use some larger pipe than 2½-inch in small portions of the system.

In one field seven rigs, widely scattered over the field, have been operated satisfactorily with this system with 125 pounds pressure on the gas line and 250 pounds pressure on the water lines.

If the field is large, there are usually two or more sources of water feeding into the system. The water pumps are either reciprocating or centrifugal type and powered by electric motors or multicylinder gas engines, depending upon what power is most economical for the field. Several medium sized pumps operating in parallel are commonly used when the demand is heavy, rather than one large pump of sufficient capacity to meet the maximum demand. By using several small pumps it is possible to vary the capacity of the water system in keeping with the number of rigs operating, with the lowest expense.

Preparation of Locations

As many locations are kept prepared at all times as there are rigs operating. In preparing a location, the derrick, pipe racks, mud pits, water and fuel lines, and the board road are constructed before the rig is moved in. This work is done according to a standard plan and is the same on each location where the ground condition will permit. The standard is developed on the first few wells drilled in the field to meet the local conditions. The mud pits are usually dug either with teams or small drag lines. Small drag lines have been found especially efficient and economical for this work.

Having this work done prior to moving the rig into the location allows the drilling crews to concentrate on setting up the rig.

Improvement in Drilling Equipment and Technique

There have been a number of improvements in drilling equipment and drilling technique which have played an important part in speeding up drilling operations. The more important of these are: unitization of drilling equipment, standardized layouts for drilling rigs, improved coring methods, and other improved equipment and methods. The last item includes the use of larger slush pumps and boilers, internal flush drill pipe, fishtail bits with welded-in blades, and better drilling fluid control.

The tendency toward unitization of the various parts of the drilling rig has resulted in considerable saving in time and transporting equipment from one location to another and in setting up and dismantling the rig. The drawworks was the first unit of the rig to be unitized generally. This has been followed by mounting the slush pumps on skids so they can be moved as a unit, as shown in Figure 4, and in many cases the drilling engine has been mounted on a substructure so it can be skidded on short moves without dismantling. Most operators have also developed special racks and skids which are used in moving different parts of the rig. A skid of this type which has been especially useful is shown in Figures 5 and 6. This skid is constructed so the rotary, swivel and all hoisting equipment may be moved at one time and can be easily loaded or unloaded when setting up or dismantling a rig. Figure 5 shows the top view of the skid with the equipment it carries in place as it appears on the derrick floor, while Figure 6 shows the skid on a heavy duty truck in transit to the next location.

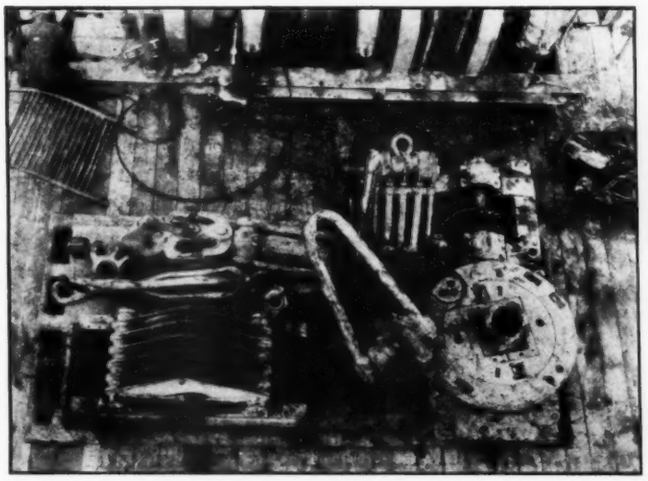


Fig. 5—Rack used for moving part of rig material. Note orderly arrangement

Another step toward reducing the time to set up and dismantle a rig has been to reduce the number of steam and water lines on the rig to a minimum. These lines are made up in sections with flanged instead of screwed connections, which greatly reduces the time to lay or take up the lines. It has been found helpful to build racks to carry the lines and small boiler fittings when moving the rig. There are a number of designs for such racks which are satisfactory.

Standardized Layouts for Drilling Rigs

As the time consumed tearing down, moving and setting up a rig is "nonproductive," a great deal of thought has been devoted toward reducing this time to a minimum. The success of this effort can be seen by referring to Table 1. On the first 10 wells drilled in the 7,000-foot field, 5.3 days were required to tear down and set up a rig, while on the last 10 wells, only 2.2 days were required to do the same work. A similar decrease in time is shown for the 5,500-foot wells. This saving in time has been due chiefly to having a standardized layout for the rigs and a well organized transportation system.

TABLE 1—ANALYSES OF WELL COMPLETION TIME IN TWO TYPICAL GULF COAST FIELDS

	Average days for		
	First	Middle	Last
7,000-foot wells—	10 wells	10 wells	10 wells
Rigging up	3.6	1.8	1.3
Tearing down	1.7	.7	.9
Drilling	14.6	8.6	7.7
Casing and cementing	8.4	5.7	4.7
Completion	1.5	1.1	1.2
Coring	2.3	1.2	.4
Miscellaneous	1.2	1.4	2.4
Total time	33.3	20.5	18.6
5,500-foot wells—			
Rigging up	3.7	2.3	1.3
Tearing down	1.3	1.0	.7
Drilling	13.4	7.8	7.1
Casing and cementing	5.5	6.1	4.7
Completion	1.5	1.2	1.1
Coring	3.4	1.8	.8
Miscellaneous	.2	.1	.2
Total time	29.0	20.3	15.9

Miscellaneous time includes repairs to rig, formation tests, slope tests, etc.

No attempt will be made to give the details of a standard rig layout in this article. They must be governed by the size and type of rig being standardized as well as the conditions to be met in the field being developed. However, in formulating a standard layout for a rig or group of rigs, good engineering practices should be followed. The steam, water, and mud lines should be made as short and direct as possible. All unnecessary equipment should be discarded, and the essential equipment placed so it will perform efficiently. One company operating in the Gulf Coast area has developed a standard layout for its rigs which requires so little rearranging on a move, the crews do not have to change from their regular tours while tearing down or setting up a rig. With this plan, one crew is able to do the work which formerly required all of the crews on the rig.

When tearing down, moving and setting rigs without breaking tours, it is necessary to do a great deal of this work at night, and since no electric lights are available after the boilers are shut down several gas flares are set up at the locations, which give ample light to work by.

The transportation facilities for moving a rig are equally as important as a standard layout in reducing the "nonproductive" time. For the greatest efficiency in moving a rig, there must be a close coordination between the transportation and drilling crews. A successful plan is to work out a systematic arrangement for laying down the rig by the drilling crews, and the same scheme is followed by the transportation in placing the equipment at the new location.

In addition to systematic arrangement of the equipment for moving, there must be ample transportation facilities. Rig moves have been made in the 7,000-foot field over distances up to 5 miles in nine hours with the following equipment: Three 60-horsepower tractors; one heavy duty truck (10-ton); four to five light duty trucks (3-ton); two crane trucks.

Besides assisting in loading and unloading the other trucks, the drilling crews used the crane trucks for handling material while setting up or tearing down the rig.

Improved Coring Methods

Recent improvements in wire line coring methods permit the taking of a core 2 inches in diameter and 10 feet in length. This has done much to reduce the time formerly required for coring on a well, as the wire line core barrel does not require a round trip with the drill pipe. The cores taken with these barrels are entirely satisfactory for geological purposes. There has also been a marked improvement in the drilling qualities of the core bit. This bit will now cut nearly as rapidly as the regular fishtail bit.

Electrical logging devices have practically eliminated coring except in the pay horizon. The surveys made with these instruments are widely used for correlation purposes. As only one survey is usually required on a well, this represents a worthwhile saving in time.

The use of larger slush pumps in conjunction with larger boilers has perhaps contributed as

much to increased drilling speed in the Gulf Coast area as any other factor. In the soft formations encountered in the Gulf Coast, the volume of drilling fluid furnished by the larger pumps tends to wash out the formation ahead of the bit. This has resulted in much greater bit service and has enabled the driller to maintain a high drilling speed with a minimum amount of weight on the bit to keep the hole straight vertically. The larger volume of fluid also keeps the hole in better condition by washing the cuttings out of the hole faster than when using smaller pumps.

Most of the rigs operating in the deeper fields in the Gulf Coast have at least one 18-inch or 20-inch slush pump, and many rigs have two large slush pumps.

The adoption of larger pumps made it necessary to increase the boiler capacity of the rigs. The 125-horsepower 300-pound w.p. boilers are meeting with special favor, although a number of rigs are using 350-pound w.p. (saturated) and 350-pound w.p. superheated boilers. Each rig has from two to four of these boilers, depending upon the size of the rig and depth of the well to be drilled.

There is also a definite trend toward the use of drill pipe designed to reduce fluid friction. There are a number of makes of internal flush drill pipe still somewhat in the development stage, which are being tested in the Gulf Coast area. The use of full hole tool joints on regular drill pipe to reduce fluid friction is practically universal.

The operating personnel generally have acquired a better knowledge of drilling fluids, which has enabled them to keep the drilling mud in better condition. This has resulted in more efficient slush pump operation, and better cutting action by the bit.

Fig. 6—Rack shown in Figure 5 loaded on heavy-duty truck

Fishtail bits have been improved both in design and the materials used in their manufacture and dressing. The box-type fishtail bit is proving more popular than the pin shank because the water courses do not cut out so quickly. This is especially important since larger slush pumps are being used. There has also been a steady improvement in the quality of hard-surfacing materials and in the technique of applying them. Another distinct improvement is the development of welded-in blades in fishtail bits. This permits the use of new metal for the blades each time the bit is dressed. As an example of the improved bit service, the regular 9⅝-inch fishtail bits used in the 5,500-foot field in the last quarter of 1934 averaged less than 500 feet per bit as compared to an average of over 1,200 feet per bit in the last quarter of 1936 for 9⅞-inch box-type fishtail bits with welded-in blades. However, the use of larger slush pumps was probably partially responsible for this increased service. This increased bit service has materially reduced the number of round trips per well to change bits.

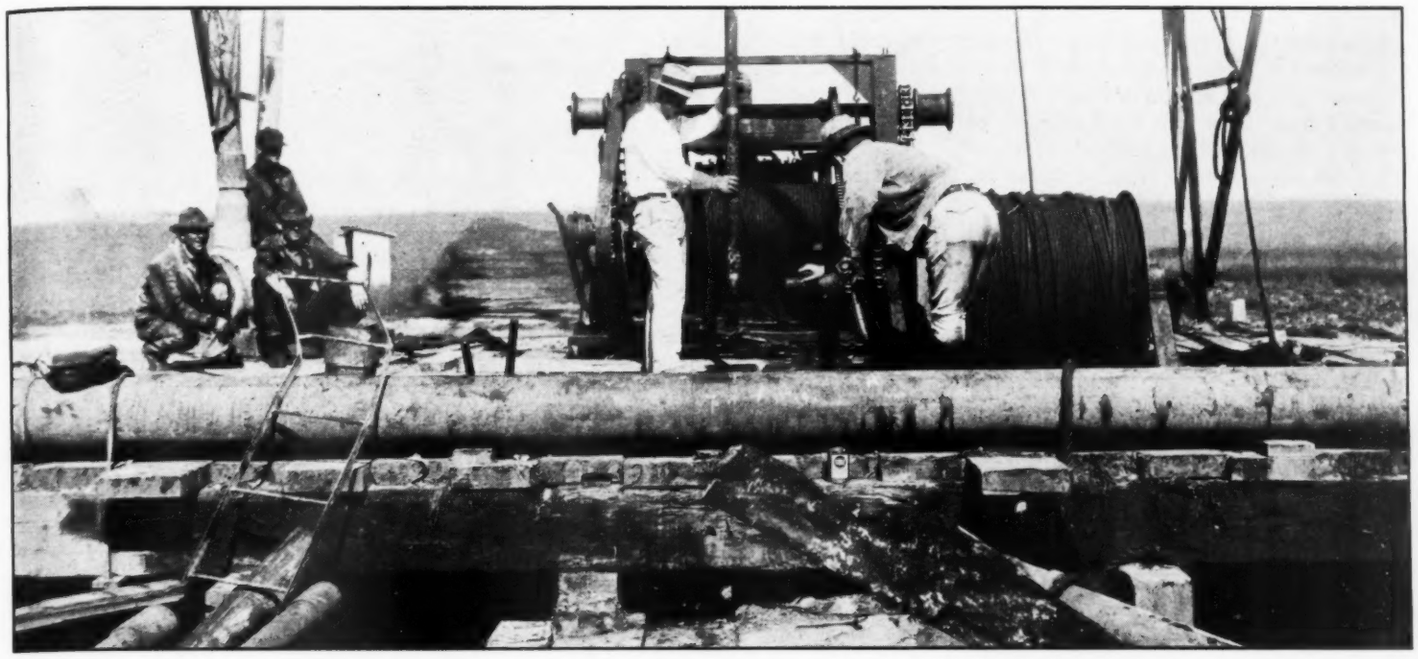
Liner packers have been developed which are run in the well and set with tubing, eliminating an extra round trip with drill pipe.

There has been a general improvement in all rig materials such as chains, brake lagging, and pump parts which individually has not resulted in large saving of time, but together, by reducing repair time on the rig and giving more efficient operation, have made important savings in time.

If the men responsible for these improvements in equipment and methods which have been briefly discussed were not mentioned, the basic reason for the progress made in drilling technique would be overlooked. Certainly the closer cooperation between the field personnel, the engineer, the geologist, and the executive, and a better understanding of their mutual problems, should be given more credit for the efficiency of Gulf Coast drilling operations than any other factor.

Bay City development

Gulf Coast's deepest producer



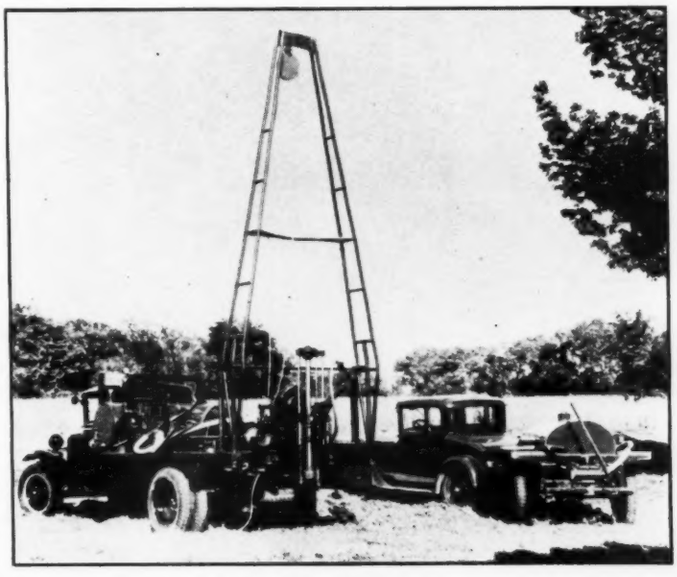
Running seismograph detector in old well to check outlines of salt dome

Changing Conception of Structural Features in the Gulf Coast Area

By ROBERT P. CLARK
Consulting Geophysicist, Houston, Tex.

When Spindletop was discovered in 1901, the mold was formed from which, for three decades, the doctrines of coastal geology have been cast. From that time it was assumed the dominant structural phenomena was the "salt dome." A large mass of crystalline NaCl (salt) intruded itself into the overlying sedimentary beds, rising in some instances to within a few hundred feet of the surface. The disturbance so created involved structural displacements which were favorable traps for oil. "Cap rock" production and "flank" production became the well known corollaries to the major premise. Batson, Saratoga, Sour Lake, Humble and a host of other shallow domes added their weight of evidence until the salt dome conception became an article of faith.

However, the hundreds of derricks on Goose Creek and Orange fields pointed an accusing crown block at the flaw in this line of thought. Here were two fields proven by vast production. Wells in the center of these fields failed to show salt at what was then considered great depth. Other "nonsalt dome" types appeared to mystify the bewildered geologist. Such were cataloged as "the exception which proves the rule" and comment on their geological structure was "hush-hushed" as the easiest solution. Geophysical exploration in the 10-year period between 1924 and 1934 strove to conform to the orthodox theories. The geophysical data were hammered and bent by honest but perplexed scientists to a semblance of conformity. The discovery of Sugarland dome apparently saved the day. Here was a bona fide salt dome at a depth of approximately 4,000 feet. Its gravitational reaction was the same as the "nonsalt dome" type. Hurrah! ! ! Then Orange, Goose Creek and all the rest must be "deeply seated salt domes." Now since everything conformed and the "nonsalt dome" type was discarded for the "deeply seated dome," the expansion of geophysical and geological thought became practically paralyzed. Tomes were written and voluminous data published on the complex niceties of "downbuilding" versus "up thrust." Now that there was no longer any question as to type of structure the heavy guns of the allied profession turned their fire on each other and split hairs and infinities (even as you



Drilling "shot" hole

and I) over the pressing question of "which is the most important, geological deduction or geophysical information?"

The geophysical section developed an internecine quarrel upon the relative merits of seismic and gravitational methods of exploration, the magnetometer operator vainly attempting to make it a three-way fight.

While all this was in progress a few free minds felt a disquieting hunch that all was not so quiet on the coastal front. New discoveries that should classify as "deeply seated" by their gravitational reaction (that

Stringing lines for "shooting"

is, a gravitational minima of wide extent), were playing impish tricks. Now, by all the rules of Eotvos et al, the highest point of the salt, and, by inference, the structure also, should coincide with the center of the gravitational minima. In rapid succession production appeared at Hankamer, Esperson, and Mykawa, in each case about 1½ to 2 miles north of the center of the prospects gravity minima. What to do? ? ? The seismic men felt the best course was to simply discredit the gravity methods, and let it go at that. The gravity men, driven to a desperate defense, made big medicine and hinted darkly at regional shifts of the gravitational field and the influence of adjacent features. They even developed figures to prove they were correct. A few who opposed this explanation dug up just as many formulas to prove it could not be.

The geologists who should have guessed the answer in 37½ seconds flat, only sat back and refereed the match.

As a merry jest, Hastings, Manvel and a few more developed their production south of the center of their gravitational picture.

Just about this time one major company guessed the correct answer and "went to town." With a freedom of opinion rare in any field it junked the "salt dome" theory and went after results on the basis that "oil is where you find it," and that the Gulf Coast had many types of structural features.

It became apparent to many scientific minds, when released from the fetish of "salt domes," that a structural basis (a syncline of heavy rocks) would give the same gravity picture as a salt dome (an anticline of light rocks). Faulting was plentiful and proven on the coast. Given two parallel faults and a down-thrown block in the center, what have you? If you can't figure it out take a look at the structural map of English Bayou-Gillis, or at Orange.

Mental round table discussions between the geologist and geophysicist might have hurried the process of enlightenment, but the geologist could only see "salt domes" and the geophysicist could see only "data."

Now that the "salt dome" curse has lifted, the current conception of coastal subsurface phenomena will change and continue to expand. As of 1937, it will be:

The salt dome, either deep or shallow, is not the dominant feature in the coastal area. A salt dome may occur, with or because of faulting or arching of the strata, but it does not cause faulting or arching. Such is purely tectonic. Production will be found along faults "a la Luling" without a suggestion of salt. (Check North Cotton Lake here.)

Production may be found accompanying the pinching out or thinning of beds with little or no closure. (Try this on Pickett Ridge.)

Cross country faulting of great throw was developed in 1936. These features extend for miles. It will be rather strange if other large cross country features are not brought to light.

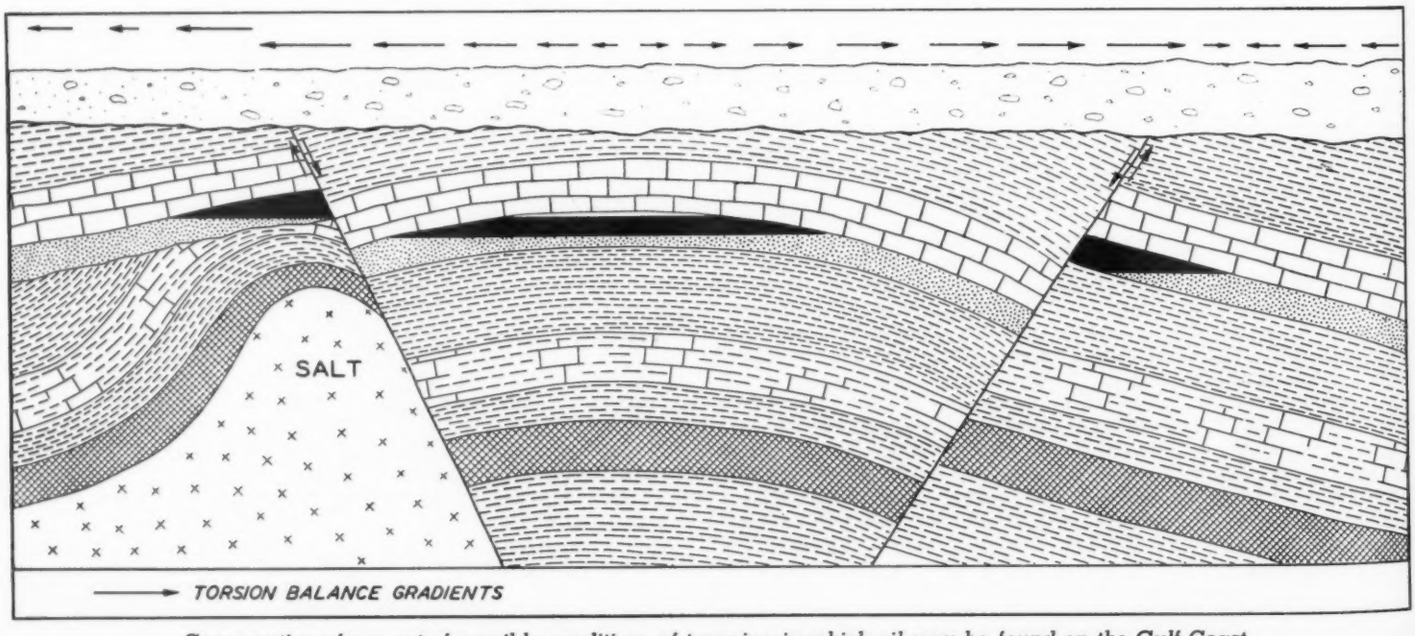
One advance thinker has suggested that

Seismograph "shooter" in wooded country

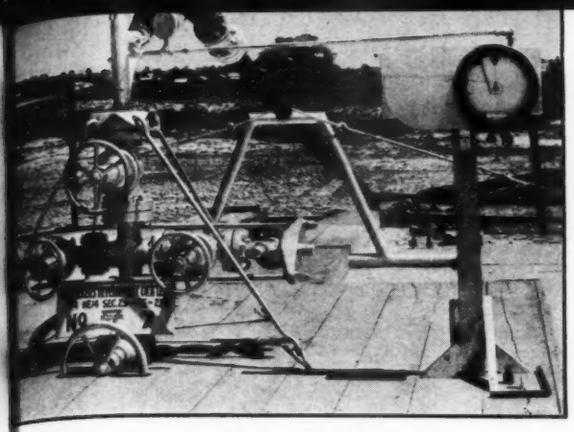
a trap for oil is made by the intersecting periphery of two adjacent rim synclines. Why not? "Shoestring" pools are not beyond possibility. The Bolivar Peninsula-Padre Island barrier beaches may present a pretty geological problem a million years from now.

To sum up:

Oil accumulation in the Gulf Coast area may be expected to occur in any type of trap, now known to geologic science.



Cross-section of one set of possible conditions of trapping in which oil may be found on the Gulf Coast



Hook-up for injection well

Efficient Methods Mark Operations in Tepetate Field

By E. O. BENNETT
Chief Petroleum Engineer, Continental Oil Co.

Production in the Tepetate field, Acadia Parish, Louisiana, is from a sand at 8,300 feet, designated locally as the Ortego sand. It is the lowermost of four distinct sand bodies which are found in the "Marginulina" zone of middle Oligocene age.

Structurally, the field represents a closed dome, characterized by rather gentle dips and elongated somewhat in an east-west direction. The closure on the productive horizon probably amounts to 200 to 250 feet. Faulting, with a throw of 500 to 600 feet is indicated on the north flank of the structure.

The field is about 3 miles east of Bayou Pique in the northwestern part of Acadia Parish, about 12 miles northeast of the town of Jennings and 6 miles northwest of the town of Iota.

Drilling Methods

Wells in the Tepetate pool are drilled with rotary equipment. In the interests of safety, speed, and economy, 800,000-pound, 136-foot derricks with 30-foot bases are used. All derricks are erected on substructures. Cellars and derrick foundations are erected for several locations in advance of drilling so that upon completion of any well the derrick used may be moved to a new location. Two derricks are at all times erected in advance and whenever a well is finished the contractor is able to move with no delays and start on a new hole. In many cases the mud used at one location is pumped to the next location before moving the slush pumps.

A short section of 13⅜-inch conductor pipe, 1,700 feet of 10¾-inch surface pipe and 8,315 feet of 5¾-inch pipe makes up the program used in casing Tepetate wells. The 10¾-inch pipe is set in an average of 3 days, and is cemented to the surface. The 5¾-inch is set in an average of 21 days from the starting of drilling.

Wells have been completed in 21 days including rigging up, which is believed to be near a record for wells of this depth.

The average number of bits used for drilling the 8,300 feet is 23, consisting of two 15-inch drag bits, twenty 9⅞-inch drag bits and one 9⅞-inch rock bit.

A short cement lined perforated section of pipe is run on the bottom of the oil string of casing. At the bottom of this perforated section, which is about 3 feet long, there is a float shoe. At the top there is positioned a full-hole cementing collar. While the casing is being run, circulation may be had out the bottom float valve if required. After total depth has been reached, a bottom-hole cement plug is placed in the pipe. When this plug hits the collar covering the cementing ports, the collar is pushed down to the top of the cement lining and the cement above the plug is forced out around the pipe above the perforated section.

Map of the Tepetate field will be found on page 126

After the cement has set, the bottom-hole plug and cement lining are removed and tubing is then run in the well. The mud in the casing is circulated out with clear water and the hole unloaded through a three-eighths inch choke on the casing with the aid of high-pressure gas injected through the tubing. After oil shows at the casing, the flow is reversed and the well put on production through a small choke in the tubing.

Christmas Trees

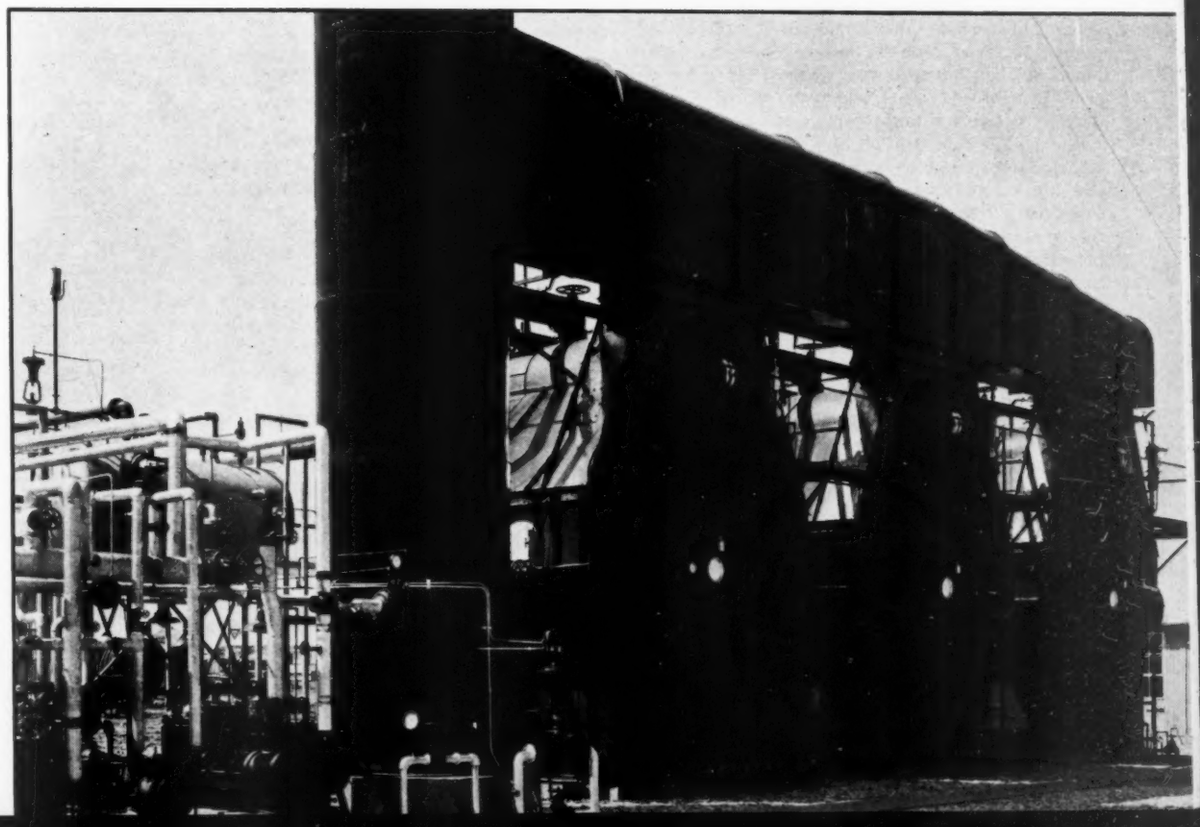
A special type venturi throat noncutting master gate developed and patented by Continental Oil Co. is used above a tubing support. The tubing support has side outlets on the casing. The venturi valve is made with flanges of different dimensions at opposite ends to eliminate the necessity of a tapered spool and additional joint in going to the tubing cross. All joints in the well head connections are flanged with soft iron ring gaskets. All valves and fittings are 6,000-pound test, and no difficulties have been encountered with them up to 3,200 pounds working pressure. The side wings of the tubing and casing are each fitted with a single valve. Two valves are temporarily installed on the side of the casing through which the well is unloaded for additional protection in case a valve fails to shut completely.

Lubricated valves have been used. The top of the tubing cross is fitted with a single valve and pressure gauge. A special flange lubricator section is used above this valve when running in bottom-hole pressure and temperature instruments. The contractor furnishes a blowout preventer and master gate during drilling operations.

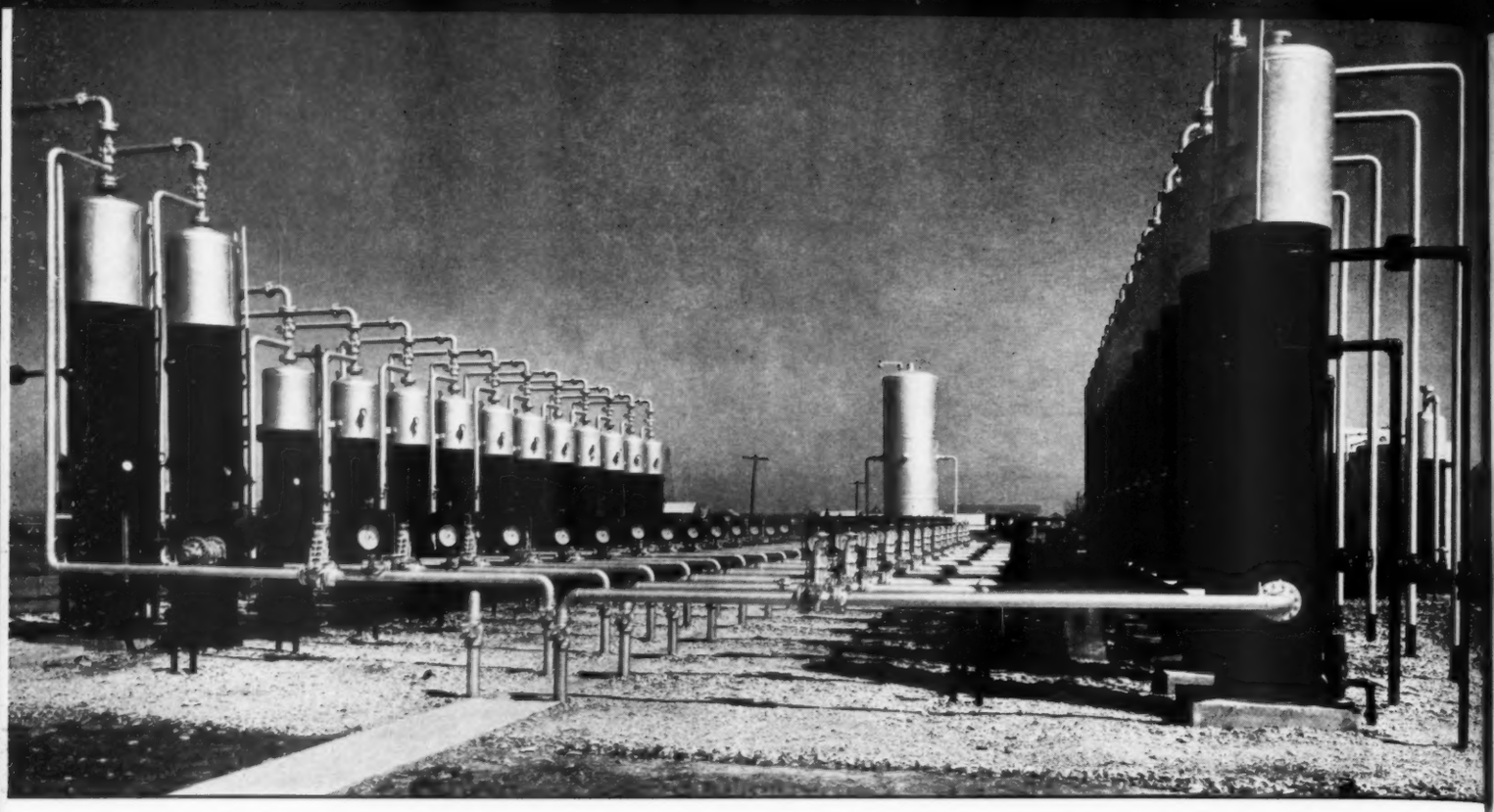
Production Methods

The producing horizon in Tepetate wells has an average thickness of 18 feet. It is underlaid with water under hydrostatic pressure and over it there is a gas cap having an average thickness of 70 feet.

Extreme care in completing and producing wells from a structure of this type is required. If



Steam generator plant of crude stabilization and gasoline-recovery system



Central separator battery installation

wells are drilled too low and produced hard they will make salt water. If they are completed too high and produced hard they will make too much gas. A fine degree of pressure balance is therefore necessary to take oil out between the water and the gas without bringing either of them in with the oil.

Approximately 0.2 per cent of connate water is produced with all oil in the field. This water is not salty and is in inclusion with the oil in the formation.

Choke sizes on all wells are carefully watched. Daily measurements of oil, gravity, gas, water, and pressures are made of each well. Routine surveys are also being made for botom-hole pressures and temperatures so that the water table surface can be watched and controlled. Most of the wells are produced with chokes three-sixteenths inch or smaller in diameter.

Stabilization Plant

Field stabilization of highly volatile, high gravity crudes is considered a necessity to save large losses which would otherwise occur. The Tepetate plant is believed to be the only well-pressure type plant in the United States where high gravity crude is stabilized in the field at the source of production, before running to pipe line.

In the Tepetate field all high pressure gas and oil separators are placed at a central location at the stabilization and casinghead plant. Field lines are run directly from christmas trees to the separators. Oil from the separators is run through positive displacement, temperature compensating meters located at each separator, then into a common stream to a plant separator. This is operated at a pressure somewhat lower than the lease separators so that dissolved gases coming out of solution can be taken off and processed with the free gas in the absorption part of the plant. The plant crude separator has three liquid level controls. The bottom one is for releasing any accumulated water which may settle out. The center float operates the main stream to the stabilizer unit. The top outlet, float controlled, is an emergency one to release the crude stream to storage should stoppage occur in the plant cycle.

The crude passes from the plant separator through heat exchangers to a reduced pressure flash tank and then to a second flash tank at a lower pressure. Vapors off the crude in the flash tanks are taken to the gasoline plant equipment for processing. From the second flash tank the crude is pumped through a heat exchanger and preheater then to the crude stabilizer unit, which is similar to the customary debutanizer. The stabilizer is operated at approximately 25 pounds and a cut just sufficient to make the crude propane-free is made. The overhead product from the stabilizer is treated for vapor recovery in the gasoline plant. The stabilized crude is taken from the bottom of the tower, through the reboiler, heat exchangers and coolers, through a master meter, then to storage or direct to pipe line to the company's terminal at Lake Charles, 45 miles distant.

Gasoline Recovery Plant

The gasoline recovery plant is of the absorption type and is operated on well pressure at approximately 500 pounds. In addition to processing the gas taken off the crude separators, the plant also processes all vapors from the stabilization cycle. The plant is designed to handle very lean vapors, the average charcoal test shows the content to be 0.15 gallons per 1,000 feet.

Residue gas is used for plant fuel, drilling, boilers and to some industrial load at Lake Charles. An 8-inch line carries the gas to Lake Charles.

Pressure Maintenance

At the present time a compressor plant is being built to return residue gas to the producing formation.

A single unit test plant was placed in operation in November 1936 to determine working characteristics and the feasibility of returning gas at high pressure. After returning approximately 175,000,000 feet of gas with this unit, it was decided that there were no difficulties sufficient to hinder the operation of a large plant and it is now being built.

The completed plant will consist of four 300-horsepower, angle type, gas engine driven compressors, suitable for compressing 11,000,000 feet per day up to 3,000 pounds per square inch.

Working pressures of 2,750 pounds were required when injecting 2,400,000 feet per day in a single well. It is planned to inject the total volume in two wells and working pressures are expected to increase up to 3,000 pounds per square inch.

Present formation pressures are approximately 3,400 pounds. The 3,000-pound compressor pressure plus the weight of the gas column in the input wells is sufficient to give a bottom-hole pressure of approximately 200 pounds in excess of the formation pressure. This is considered ample to return the residue gas back to the gas zone above the producing sand.

By maintaining the pressure in the producing zone, as near its initial value as possible, the maximum amount of gas will stay in solution in the oil, hence its viscosity will be kept at a minimum. Oil of low viscosity will flow to a well bore with less pressure differential than one having greater viscosity; and for a given amount of reservoir energy, more oil can be produced by retarding pressure decline.

Pressure Maintenance During Early Life of Production

A careful study of all the physical facts involved in connection with pressure maintenance during the early life of high-pressure pools indicates that this type of operation should be commenced as early as possible after discovery to realize the greatest ultimate economic recovery.

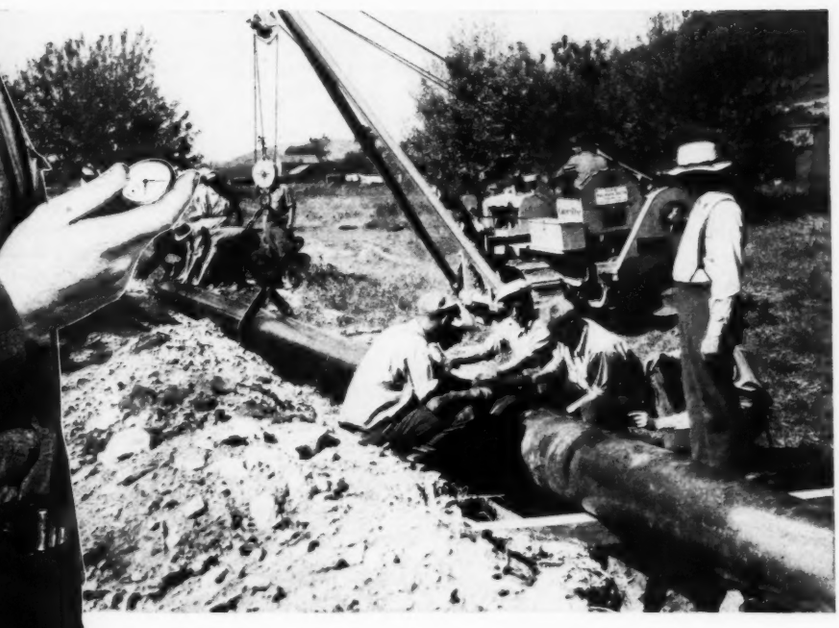
No particular difficulties have been encountered in designing and operating equipment up to 4,000 pounds per square inch working pressure.

It is estimated that the capital expenditure for satisfactory equipment to conduct pressure maintenance under high pressure will not exceed 15 per cent of the increased recovery which may be expected.

CRUDE ANALYSIS

CRUDE:	
A.P.I. gravity	38 3
Sulfur, per cent	158
Viscosity at 100° F.	38
B.S.&W.	trace
NAPHTHA:	
Range, per cent	0-27
Fraction, per cent	30 0
Gravity	55 1
Octane No.	55 0
Sulfur, per cent	02
Per cent at 122° F.	trace
Per cent at 212° F.	9 0
Per cent at 284° F.	40 0
Endpoint, °F.	4 10
KEROSENE:	
Range, per cent	31 0-59 0
Fraction, per cent	28 0
Gravity	41 6
Sulfur, per cent	03
Endpoint, °F.	530
GAS OIL: Insufficient sample for analysis.	
WAX DISTILLATE:	
Cut range, per cent	61 0-83 5
Yield, per cent	24 5
Gravity	31 9
Viscosity at 100° F.	70 3
I.B.P.	390
50 per cent	480
E.P.	600
Sulfur	0 251
BOTTOMS:	
Cut	84 5-100 0
Yield	16 5
Gravity	18 9
Viscosity at 210° F.	388

"NO LOST MOTION ON A DRESSER-COUPLED LINE—EVERYTHING GOES LIKE CLOCKWORK!"



"Straight-line" production best describes the way a Dresser-coupled line is laid. • All field operations are uniform, speedy, and coordinated. The small, well-bunched laying and jointing crew is always "up" with the trencher! There's no lag between operations! Joint-making—mostly a matter of tightening a few bolts—is done the same way every time. All the work moves forward in unison! • In fewer words, the length of line laid with Dresser Couplings is the actual length completed, ready for test!

Note to Reader

This is the third in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line. For the complete story, write for Bulletin No. 351.

S. R. **DRESSER**

MFG. COMPANY, BRADFORD, PA.

In Canada: Dresser Mfg. Company, Ltd., 60 Front Street, West, Toronto, Ontario

SERVICE ON NEW FIELDS

ANAHUAC FIELD, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Anahuac field.

Geographic location:

Southeastern Chambers County, 6 miles south of Anahuac.

Geological data:

Structure believed to be a deep lying salt dome extends over approximately 6,000 acres. It is marked by complex system of faulting. Nineteen faults with throws ranging from 100 to 300 feet have been found. Most of the faults radiate from the center of the structure, although cross-faulting exists. Most of the production is developed from the Frio, but several wells have been completed in the Marginulina and in most cases are located downdip on flanks of field and along the faults where production is obtained below the gas-oil contact and above the water level. The water-oil contact is at 7,140 feet and the gas-oil contact at 7,020 feet. Wells are usually completed at least 65 feet below the gas-oil contact and 55 feet above the water-oil contact, with an average depth of 7,085 feet.

Development of field:

Field was opened in March, 1935, by Humble Oil & Refining Co. No. 1 A. Middleton, completed at a total depth of 7,141 feet for an initial production of 11 bbls. per hour. Production has been extended north and south and is approximately 6 miles long and about 3½ miles wide. Eleven dry holes have been drilled and the producing limits are fairly well defined. Field is two-fifths drilled up and it is estimated some 157 locations remain to be drilled.

Ownership and spacing program:

The major portion of the field is controlled by Humble Oil & Refining Co., the balance owned by Gulf Oil Corp. and Sun Oil Co. An orderly development program has been followed with one well to 20 acres.

Drilling and completion methods:

The present casing program calls for a 40-foot string of 16-inch welded conductor pipe. The surface string of 10¾-inch 35.75 Grade "C" pipe is set and cemented at 1,500 feet and is cemented with 200 sacks of cement. The cement is allowed to set 60 hours. In the early development the production string was 7-inch O.D. 26-pound Grade "C" casing, but it is general practice to use 5½-inch which is run to bottom following the running of an electrical coring test and then picked up to casing seat and cemented with 300 sacks.

After the plug is drilled liner and screen is set and is run in on 3½-inch drill pipe. After the christmas-tree is installed, the mud in the well is displaced with water by pumping through the tubing and out at the side outlet of the tubing head. The average well will produce on a quarter-inch choke 21 bbls. per hour.

Gas-oil ratio; bottom-hole pressure and surface pressure:

Average gas-oil ratio 600 feet to 1; average bottom-hole pressure 3,300 pounds, with surface pressure on casing and tubing 1,000 pounds.

Sand thickness and porosity:

Gas cap at highest Frio point 297 feet above gas-oil contact. Saturation section at highest point of structure is approximately 120 feet thick. The oil sand is very fine and has a porosity of 30 per cent.

Pipe lines:

All production taken by Humble Pipe Line Co.'s 6-inch oil line. Humble Oil & Refining Co. recently completed three gas well in the field to supply gas to its new gas line from Houston to Port Arthur. The line is 8-inch and will tie into the main 10-inch line near the town of Devers.

Daily average production and number of producing wells:

For the week ending March 15, there were 157 wells completed having a daily average production of 13,359 bbls.

Active operations:

Humble Oil & Refining Co. operates three rigs; Gulf Oil Corp. two, and Sun Oil Co. one.

Drilling time:

The time required to drill and complete a well averages from 22 to 24 days.

Drilling mud:

The shale encountered makes good drilling mud and it is only in the rarest cases weighting materials of any sort must be added to the natural mud. Mud is ordinarily maintained at a weight of from 9.6 to 10 pounds and in a very fluid condition. The weight and viscosity of the mud are easily controlled by adding water and it is rarely necessary to add chemicals to maintain the proper physicals.

Rigs and derricks:

All rigs are the "medium heavy" size with unitized drawworks. Derricks are 122-foot with a 24-foot base and a 7-foot 8-inch substructure. Each rig has one 18-inch pump and one 16-inch slush pump. The 18-inch pump is used most of the time; the 16-inch being used as a standby. Some rigs are now equipped with one 20-inch mud pump instead of an 18-inch. Steam power is furnished by two 125-horsepower boilers with 300 pounds steam pressure.

Coring:

Most of the coring is done with the wire line core barrel. Coring has been reduced to a minimum due to the uniform character of the producing horizon, and less than 10 cores are taken.

Water supply:

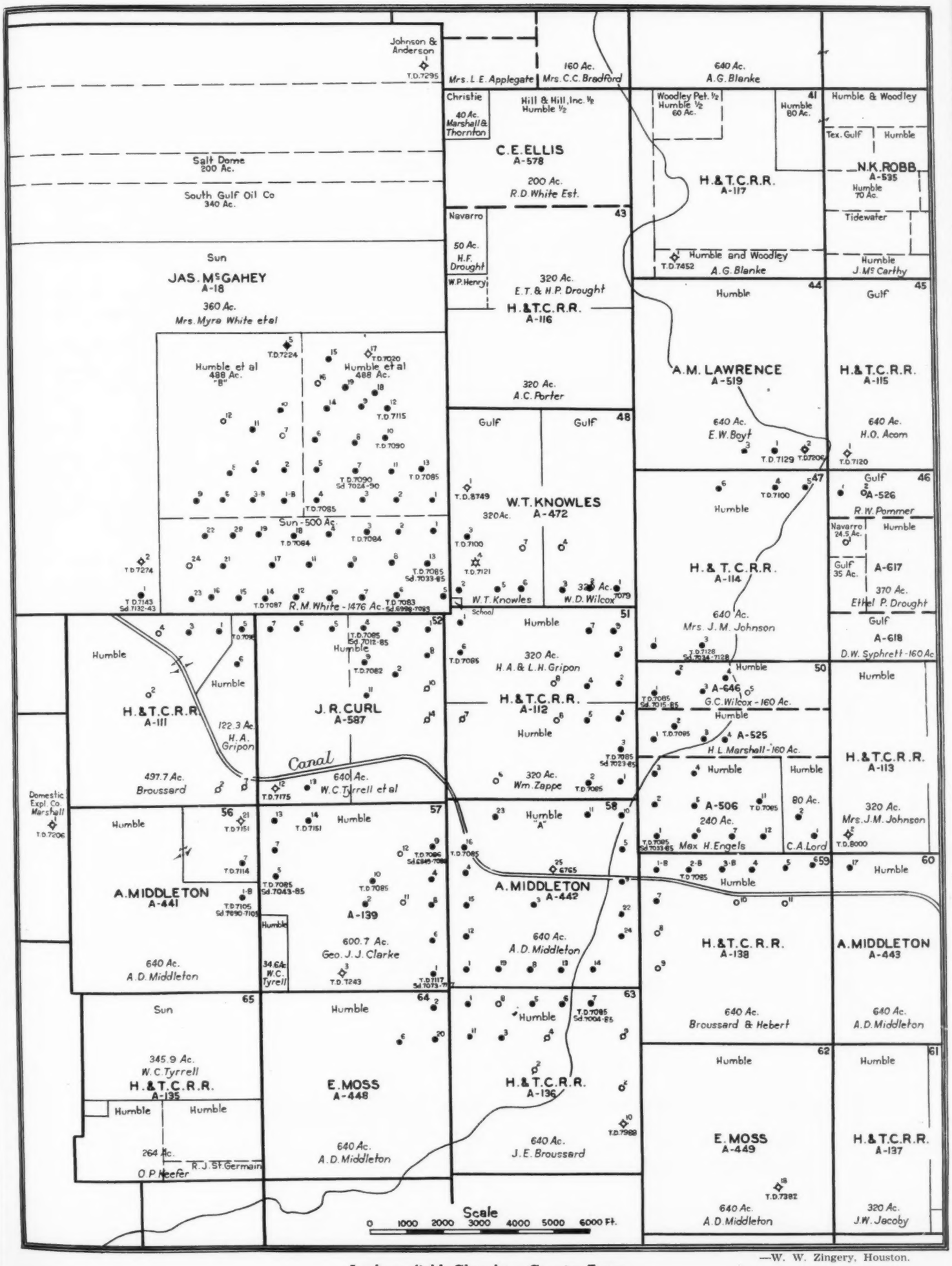
The water is supplied by pumps set at various points along the irrigation canal which bisects the field.

CRUDE ANALYSIS

CRUDE:	
A.P.I. gravity	36.9
Sulfur, per cent	.18
Color, Lovibond	1731
Cast	dark green
Flash	room temp.
Viscosity at 100° F.	43
B.S.&W.	trace
V.P., pounds	2.8
NAPHTHA:	
Range, per cent	0 5-27.5
Fraction, per cent	27.0
Gravity	53.6
Octane No.	41.3
V.P., pounds	3.6
Aromatics, per cent	18.0
Sulfur, per cent	.03
Per cent at 122° F.	...
Per cent at 140° F.	...
Per cent at 158° F.	2.0
Per cent at 212°F.	8.0
Per cent at 284° F.	31.0
Endpoint, °F.	400
KEROSENE:	
Range, per cent	27 5-40.5
Fraction, per cent	13.0
Gravity	40.9
Sulfur, per cent	.04
Endpoint, °F.	507
R. O. viscosity	475
Tag. flash, °F.	175+

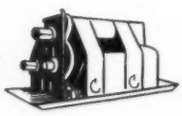
	Gas oil	Lube blend	Bottoms	Narrow Lube cut
Range, per cent	40 5-76.1	76.1-95.0	95 0-100.0	91 6-95.0
Fraction, per cent	35.6	18.9	5.0	3.4
Gravity	33.1	27.0	18.0	24.0
Sulfur, per cent	.08	.27	.51	...
Endpoint, °F.	656	...	...	...
O.C. flash, °F.	255 (P-M)	415	555	455
Fire, °F.	...	465	...	535
Viscosity at 100° F.	...	208	...	*255
Viscosity at 210° F.	...	45.7	489	64.8
Diesel index	58	...	...	...
Viscosity index	...	...	...	75
Pour, °F.	20	85	...	105

*Viscosity at 130° F.

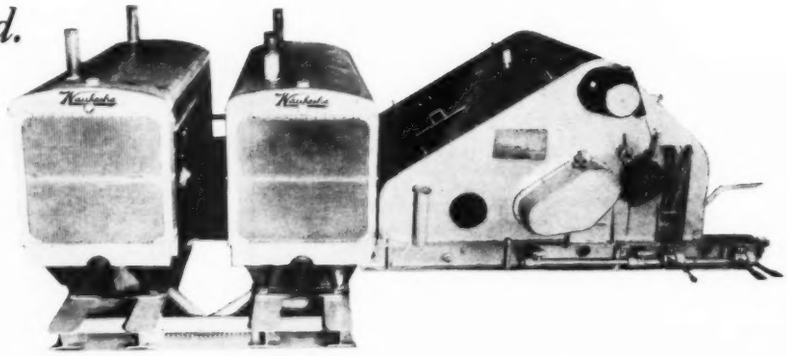


—W. W. Zingery, Houston.

Anahuac field, Chambers County, Texas

American Roller Bearings *dominate* in the oil fields the most difficult service a bearing could seek. They are *specialized* bearings—built only for heavy-duty service —designed to stand up under the tremendous loads strains and impacts of oil-field service. They carry TONS where other bearings carry pounds. Little wonder, then, that 30 manufacturers of heavy-duty drilling equipment  use them as *standard.*

PORTABLE RIG COMPANY specifies AMERICANS for this modern draw works.



THE AMERICAN ROLLER BEARING CO., PITTSBURGH, PA.

Pacific Coast Office: 321 W. Pico St., Los Angeles, Calif.

AMERICAN *Heavy Duty* **ROLLER BEARINGS**

SERVICE ON NEW FIELDS

HASTINGS FIELD, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Hastings.

Geographic location:

Northeastern Brazoria County.

Principal cities and towns:

The field is located midway between the towns of Pearland and Alvin, approximately 25 miles south of Houston on State Highway No. 35.

Type of country:

Open coastal plain.

Pipe lines:

Production is handled by Stanolind Pipe Line Co.'s two 6-inch welded oil lines, extending to the Pan American refinery at Texas City.

Geological data:

A deeply seated salt dome type of structure was discovered by torsion balance and seismograph work by Stanolind Oil & Gas Co. and Standard Oil Co. of Kansas. Production is from the Marginulina sand which extends over the structure in a uniform condition and in some sections is from 250 to 350 feet thick. The average completion depth ranges from 5,526-6,124 feet with the salt water level fairly well established at approximately 6,153 feet. Numerous faults are known to exist. Shallow gas sand is encountered at approximately 2,900 feet.

Development of field:

The field was opened in 1934 by completion of Stanolind Oil & Gas Co. No. 1 Surface which flowed 130 bbls. daily through various chokes. Sands were encountered from 5,976 feet to 6,100 feet and the well was completed at a plugged back depth after it had drilled into salt water at 6,154 feet. The producing limits have been gradually extended outward and at present cover an area 2½ miles wide and about 3½ miles in length. Production has been extended into Galveston County and the field is undefined to the north, northwest and southeast.

Principal lease holders:

Major portion of field controlled by Stanolind Oil & Gas Co. with Humble Oil & Refining Co. and several independent companies holding protection acreage on the flanks of the structure.

Spacing program:

One well to 10 acres.

Drilling and completion methods:

The casing program generally followed consists of 90 feet of 16-inch conductor pipe and a surface string of 10¾-inch cemented at approximately 1,600 feet. The production string in most cases is of 7-inch, although some companies are now using 5½-inch. This production string is cemented following the running of a Schlumberger survey and the casing is cemented on bottom and tested through gun perforations or cemented just below the gas-oil contact, around 5,800 to 5,900 feet.

Type of Equipment:

Medium heavy rigs with unitized drawworks are used; steel derricks with 24-foot base with steel substructure on wood mat. Each rig is equipped with one 16-inch and 18-inch slush pumps.

Surface pressure; bottom-hole pressures and average gas-oil ratio:

Surface pressures range from 550 to 1,000 pounds; average bottom-hole pressure, 2,700 pounds; average gas-oil ratio, 1,700 to 1; highest gas-oil ratio recorded 10,700 to 1, lowest 200 feet.

Average drilling time:

With exception of Humble Oil & Refining Co., which operates its own rigs, all wells have been drilled by contractors who have established an average completion time of 18 to 20 days.

Drilling mud:

From 9- to 10-pound mud is used from the surface to the bottom of the hole.

Water supply:

Water for boiler use is supplied by 450-foot wells.

Number of drilling operations:

Stanolind Oil & Gas Co. has six operations, Humble Oil & Refining Co. five, and three are operated by independent operators.

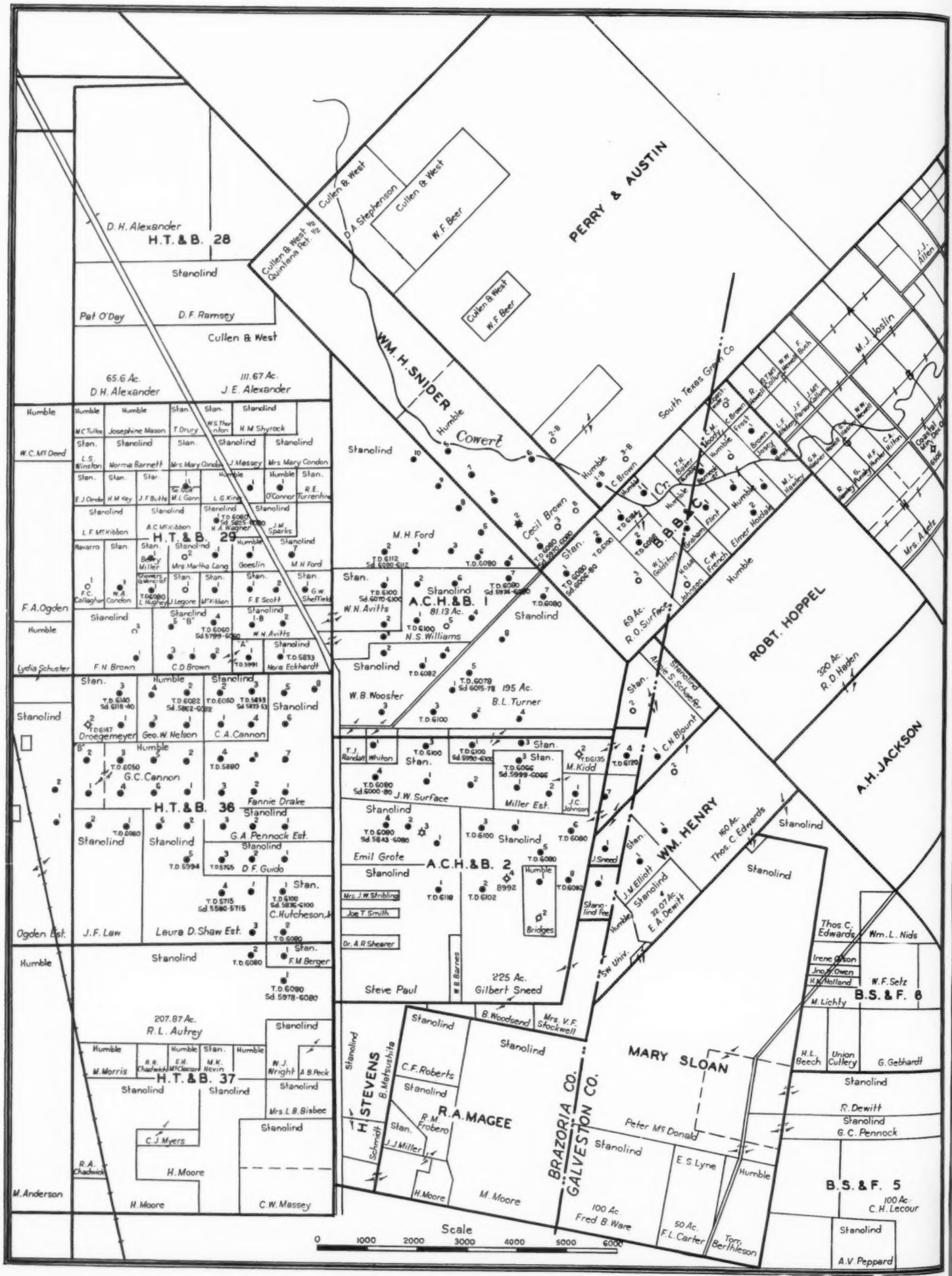
Daily average production and number of producing wells:

For the week ending March 15, there were 146 wells, having a daily average production of 12,890 bbls.

CRUDE ANALYSIS

CRUDE:				
A.P.I. gravity				31 2
Sulfur, per cent				.18
Color, Lovibond				2064
Cast				dark green
Flash, °F.				room temp.
Viscosity at 100° F.				48 0
Viscosity at 80° F.				56 0
Viscosity at 60° F.				71 0
Viscosity at 40° F.				105 0
B.S.&W.				trace
V.P., pounds				2 3
NAPHTHAS:		300 Endpoint		400 Endpoint
Range of cut, per cent		0 3-10 2		0 3-20 9
Fraction, per cent		9 9		20 6
Gravity		59 1		49 6
Octane No.		71 0		63 7
V.P., pounds		....		3 7
Aromatics, per cent		....		16 0
Sulfur, per cent		.26		.04
Percent at 122° F.		2 0		....
Per cent at 140° F.		4 5		2 0
Per cent at 158° F.		9 5		3 0
Per cent at 212° F.		44 0		12 5
Per cent at 284° F.		95 0		41 0
Endpoint, °F.		300 0		400 0
KEROSENE:		After 300 endpoint naphtha		
Range of cut, per cent		10 2-23 5		No. 41 gravity
Fraction, per cent		13 3		kerosene
Gravity		41 0		after 400 EP.
Sulfur, per cent		.05		naphtha
Endpoint, °F.		428 0		
R.O. viscosity		265 0		
Tag. flash, °F.		111 0		
	Gas oil		Lube	Bottoms
Range of cut, per cent	20 9-68 2		68 2-92 4	92 4-100 0
Fraction, per cent	47 3		24 2	7 6
Gravity	31 0		23 7	16 1
Sulfur, per cent	.17		.25	.6
Endpoint, °F.	662		....	....
O.C. flash, °F.	214 (P-M)		420 0	640 0
Fire, °F.	....		485 0	....
Viscosity at 100° F.	....		575 0	....
Viscosity at 210° F.	....		59 0	1288 0
Diesel index	47 5		....	....
Viscosity index	....		....	....
Pour, °F.	below 60		40 0	....

Field: Hastings. County: Brazoria.
Representative sample of crude from storage in field.

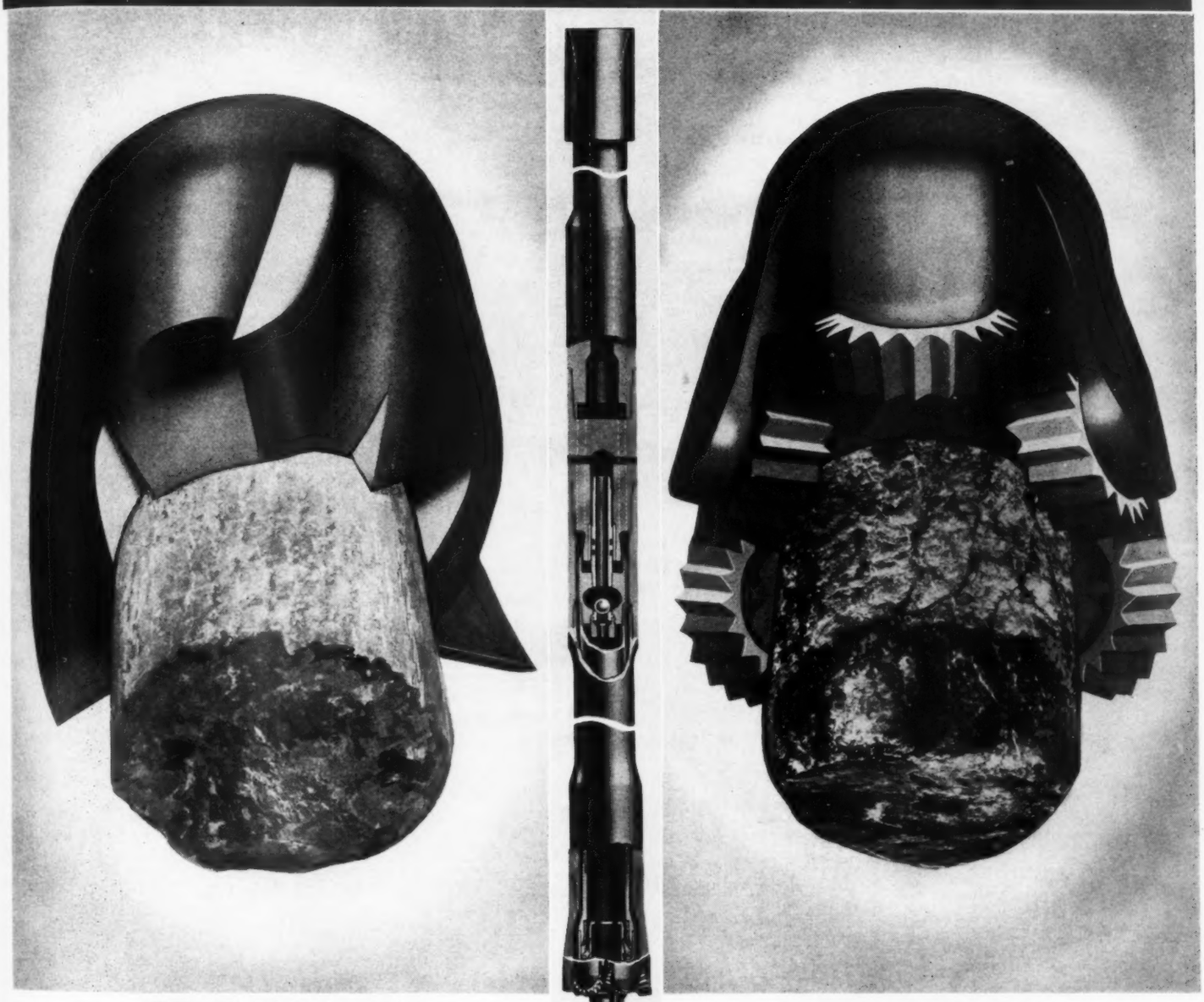


Hastings field, Brazoria County, Texas

—W. W. Zingery, Houston.

REED *Kor-King* CORE DRILL

ESPECIALLY DESIGNED FOR EASE OF HANDLING GREATER CERTAINTY AND INCREASED PERCENTAGE RECOVERY OF LONGER— LARGER DIAMETER CORES



REED KOR-KING
SOFT FORMATION CUTTERHEAD

REED KOR-KING
HARD FORMATION CUTTERHEAD

Interchangeable on the same size core drill

REED ROLLER BIT CO.

LOS ANGELES HOUSTON OKLAHOMA CITY NEW YORK

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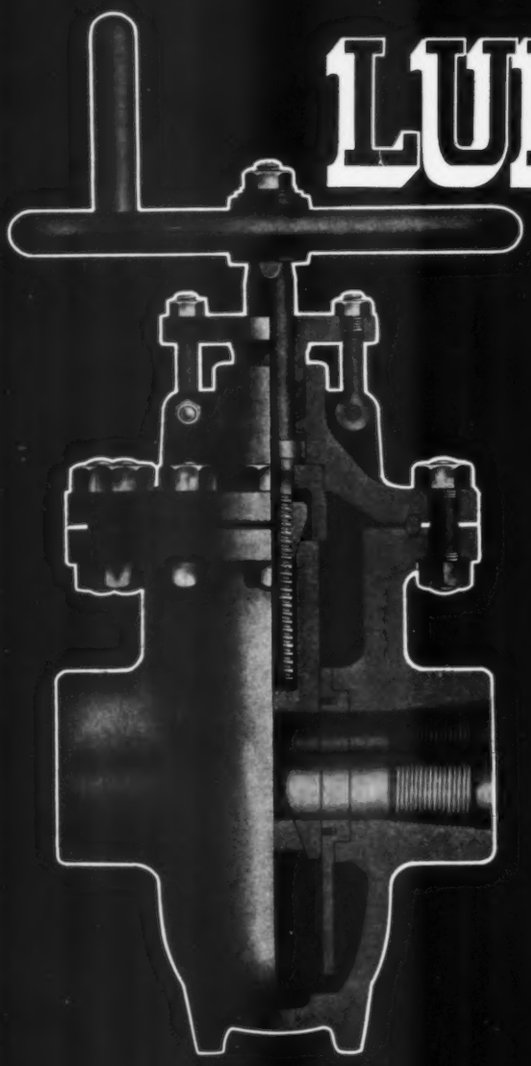
Mid-Continent and Gulf Coast Distributors for MARTIN-DECKER PRODUCTS

LUBRICATION



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Design of the W-K-M Valve permits a method of lubrication not possible in any other gate valve. The body itself serves as a grease chamber . . . the 3-inch valve, for example, holding 6 pounds of compression grease. The gate and segment are thoroughly lubricated at each operation. This means easy opening and closing even at full rated pressure, complete freedom from internal corrosion, and a minimum of friction. Positive lubrication of this kind is one of the numerous features which place the W-K-M Gate Valve in a class by itself.

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COSTS NO MORE THAN ORDINARY VALVES

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Export Office: 74 Trinity Place, New York

Cable Address: "WILKOMAC"

The 4 W-K-M Valve types presented below embody the same patented features and together eliminate 95% of all gate valve troubles.

QUICK OPENING TYPE

HIGH PRESSURE STEEL

MEDIUM PRESSURE SEMI-STEEL

LOW PRESSURE IRON BODY

SERVICE ON NEW FIELDS

AMELIA-WEST BEAUMONT, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:
Amelia and West Beaumont.

Geographic location:
North Central Jefferson County, Texas.

Principal cities and towns:
Both fields are about 2 miles west of the Beaumont city limits, just north and south of State Highway No. 90.

Type of country:
Flat open coastal plain, except West Beaumont which is near wooded section outside of Beaumont city limits.

Geological data:
Deeply seated salt dome type of structure in which numerous faults have been found. Producing horizon at Amelia is encountered about 400 feet below top of the Frio horizon, while at West Beaumont, three sands have been found in the Heterostegina, Marginulina and Frio sections at 5,376, 6,100 and 6,200 feet. Both fields are believed to be on the same structure, but are separated by a large fault.

Development of field:
First production was obtained by completion of Humble Oil and Refining Co. No. 1 M. E. Langham in February 1936. It flowed 20 bbls. per hour through a quarter-inch choke with tubing pressure 675 pounds and casing pressure 800 pounds, from a total depth of 6,817 feet. All producing wells have been completed by Humble Oil and Refining Co. which has extended the field along a northeast southwest trend through the A. Savery and Charles Williams surveys, covering an area of about 2 miles in length and approximately a mile wide.

West Beaumont was opened by Glenn H. McCarthy No. 1 Bessie Longe, in the H. Williams Survey. Production was obtained by perforating casing at 5,835-55 feet and the well flowed 75 bbls. of distillate per day through a one-thirty-second-inch choke. Development has been carried on by McCarthy and Stanolind Oil and Gas Co. who have completed 6 wells. The probable producing area cannot be estimated at this time, although the producing limits have been definitely defined to the west by the abandonment of a deep test drilled by Texas Co.

Pipe lines:
Production at Amelia is taken by Humble Pipe Line Co. 6-inch oil line which ties into main 8-inch trunk line north of field. West Beaumont production is taken by Sun Pipe Line Co.

Principal lease holders:
Major portion of Amelia acreage is controlled by Humble Oil and Refining Co., while at West Beaumont, Stanolind Oil and Gas Co., Glenn H. McCarthy and Texas Co. are the principal lease holders.

Gravity of oil:
Gravity of oil at Amelia is 29 degrees; at West Beaumont, gravity ranges from 26.7-29.7.

Drilling and completion methods:
Casing program calls for about 200 feet of 16-inch welded conductor pipe cemented to the surface with a surface string of 10¾-inch casing cemented at about 2,000 feet. The production string of 7-inch is cemented on bottom and the well is tested through perforated casing according to Schlumberger survey. Majority of wells are completed through quarter-inch choke. The casing program at West Beaumont consists of 1,200 feet of 10¾-inch casing and a production string of 5½ to 7-inch casing is used which is cemented on bottom. Wells are brought in by washing hole with clear water.

Type of equipment:
Rigs are the medium heavy size with unitized drawworks. Steel derrick 122 feet high with a 24-foot base and a 7-foot 8-inch substructure. Power is supplied by three 125-horsepower steam boilers. Each rig is equipped with one 18-inch and one 16-inch mud pump or two 18-inch pumps.

Spacing program:
Up to the present the fields have been developed on the basis of one well to 20 acres, although in subdivided portions one well to 10 acres will be followed according to an agreement with landowners.

Gas-oil ratios:
Average ratios 522 feet. Lowest ratio recorded was 316 feet while the highest was 1,020 feet.

Surface pressures:
Surface pressure ranges from 650 to 2,620 pounds on the casing with tubing pressure from 375 to 2,620 pounds. High gas-oil ratios at West Beaumont result in the casing pressure ranging from 1,900 to 2,200 pounds on the casing to 1,700 to 1,975 pounds on the tubing.

Drilling mud:
Natural mud of 10-pound weight is used from surface to gas cap at which time it is increased to 11 and 12½ pounds.

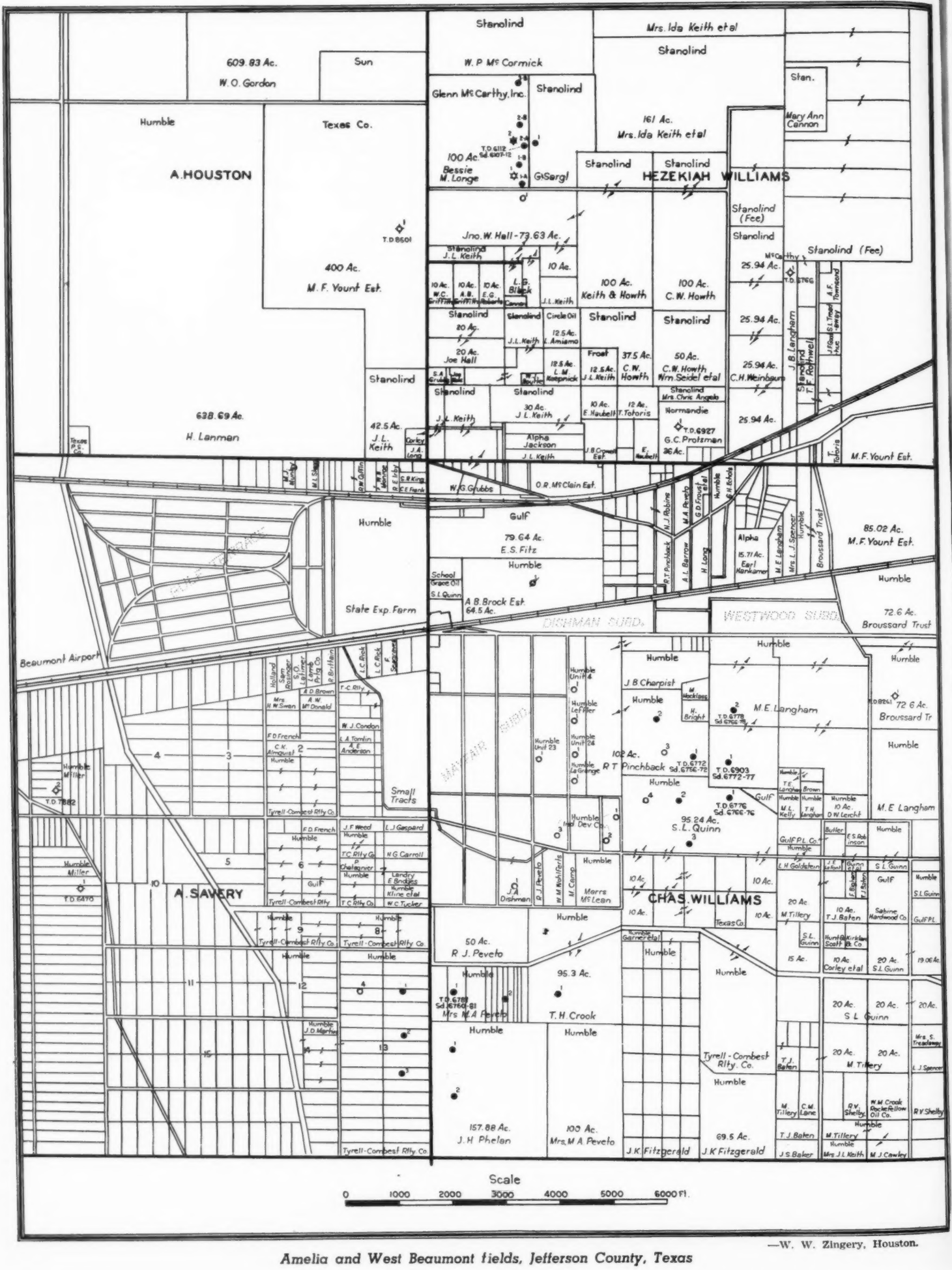
Undrilled locations and present drilling operations:
There is no estimate of the number of undrilled locations as the field is undefined in many directions. Humble Oil and Refining Co. has 6 active rigs, 5 of which are operated by contractors. One rig is running at West Beaumont, although two locations will be drilled in the near future by Stanolind Oil and Gas Co.

Daily average production and present number of producing wells:
As of week ending March 15th, there were 19 producing wells, having a daily average production of 1,800 bbls.

CRUDE ANALYSIS

CRUDE:	
A.P.I. gravity	28.7
Sulfur, per cent	.20
Color, Lovibond	2331
Cast	dark green
V.P. pounds	1.3
NAPHTHA:	
Range of cut, per cent	0.0-17.6
Fraction, per cent	17.6
Octane No.	65.2
Sulfur, per cent	.034
I.B.P., °F	175
Per cent at 212°F	6.5
Per cent at 284°F	52.0
Endpoint, °F	385
Gravity	49.5
V.P., pounds	2.3
KEROSENE:	
Range of cut, per cent	17.6-31.2
Fraction, per cent	13.6
Sulfur, per cent	.07
Endpoint, °F	501
Gravity	34.5
R. O. viscosity	475

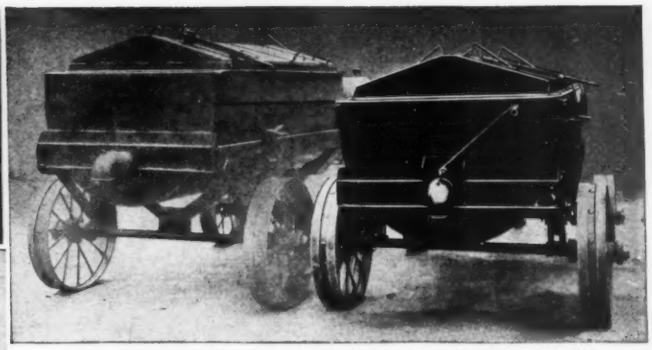
	Gas oil	Lube. blend	Bottoms
Range of cut, per cent	31.2-60.0	60.0-90.0	90.0-100.0
Fraction, per cent	28.8	30.0	10.0
Sulfur, per cent	.145	.3	.73
Endpoint, °F	634		
Gravity	29.1	22.4	15.8
O. C. flash, °F	250	360	605
Fire, °F		425	
Viscosity at 100°F		384	
Viscosity at 210°F		50.8	872
Viscosity index		35	
Pour, °F	below 70	—15	
Diesel index	42.0		



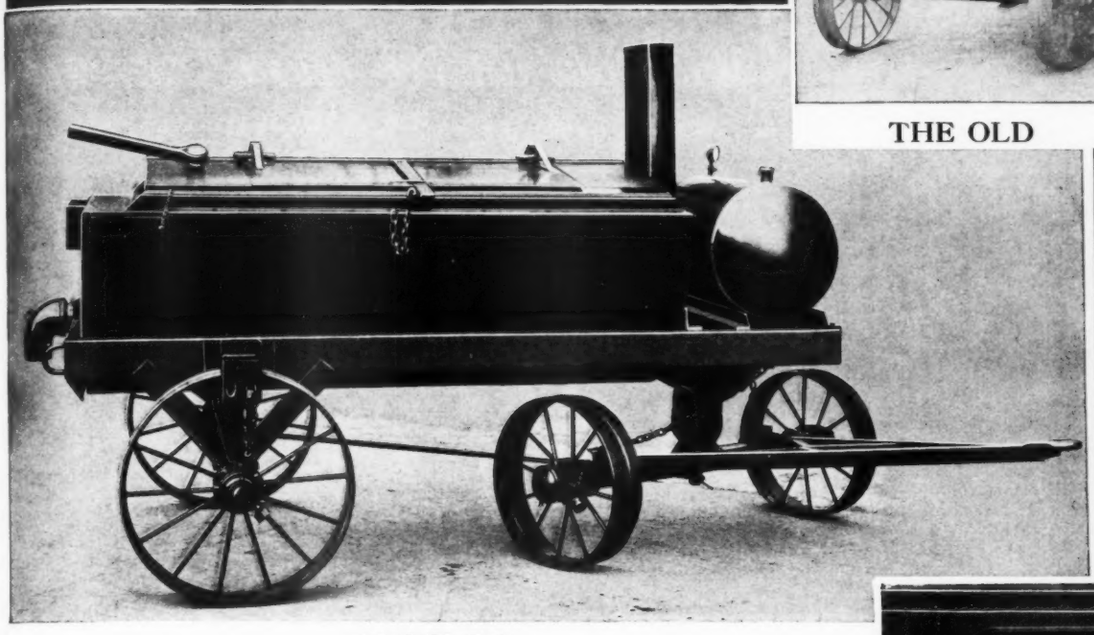
—W. W. Zingery, Houston.

Amelia and West Beaumont fields, Jefferson County, Texas

At Last—
A NEW DOPE POT



THE OLD



THE NEW

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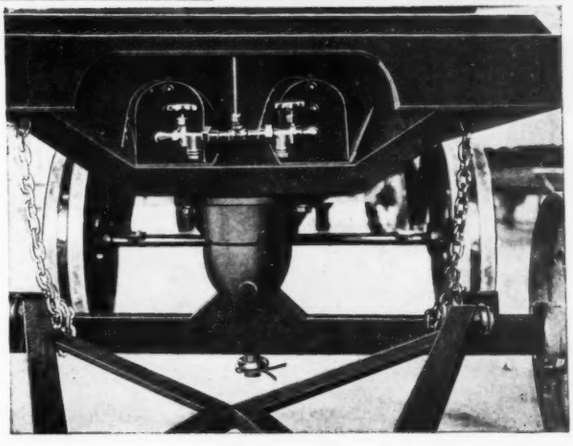
MODEL DH



THE NEW FEATURES:

1—*Loading Height dropped 5 to 9 inches* below any other kettle in the field.

2—*20% more heating area on Vat . . . cuts* down *heating time* by *25%.*

3—*Front wheels and back wheels track* on the standard truck tread.

4—*4" Draw-Off Cock submerged* in the vat—*always hot* and ready to operate.

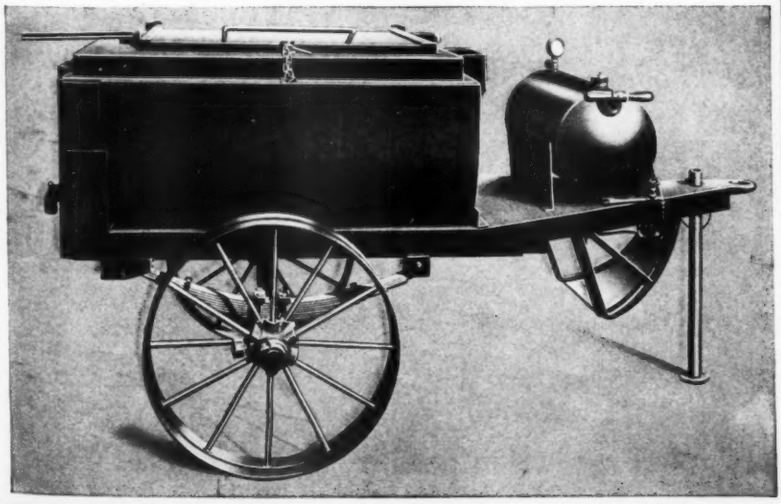
5—Hinged *Lock Brake for each rear wheel.*

6—Outside *shell full floating*—prevents warping, distortion or breakage of the frame.

7—*Double Anti-Splash Device*—on *both Vat and Lid.*

8—*50-Gallon Fuel Tank—twelve hour burner operation* at *full blast.*

MODEL ST



MODEL ST *Coilless Burners* that *generate 2140° temperature* combine with a special designed vat to *give 25% faster heating* on this Model ST. Heavy duty steel wheels and bearings, and semi-elliptical springs fit it for rough going along the right-of-way. Front skid plate protects burners from damage in case kettle comes unhitched while being towed. *Draw-off cock submerged in vat—always hot* and ready to operate.

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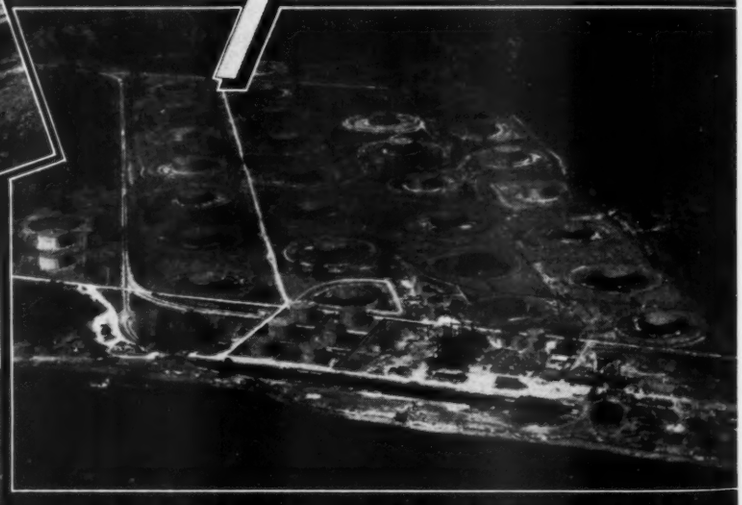

Aerial view of the first high pressure tanks erected at Warren Petroleum Company Terminal, Norsworthy, Houston ship channel, from which Warren exports large quantities of natural gasoline each year.

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JUST NATURAL GASOLINE

SERVICE ON NEW FIELDS

DICKINSON FIELD, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Dickinson. Producing area divided into three districts and referred to by some as Dickinson, Gillock and Diadem.

Geographic location:

Eastern Galveston County, near west shore of Galveston Bay.

Principal cities and towns:

The town of Dickinson is approximately 1½ miles west and northwest of the field and about 25 miles southeast of Houston, or midway between Houston and Galveston on State Highway No. 75.

Type of country:

Country is a flat typical open coastal plain.

Geological data:

The structure is believed to be a deeply seated salt dome of a very faulted nature which has been responsible for the numerous producing sands found in the Frio horizon from 8,000 to 9,100 feet. General opinion is that while the area is composed of three districts, all producing from different levels, these sands are associated with the same structure. It is assumed the Gillock area will be linked with the Dickinson field proper, while the Diadem area to the northwest is believed to be cut off from the main section by a large fault. This structure was found by the use of reflection seismograph and torsion balance.

Development of field:

Following the blowout of Humble Oil and Refining Co. No. 1 Maco Stewart in 1934, the first flowing well, Humble Oil and Refining Co. No. 1-B Maco Stewart was completed the same year in sand at 7,998-8,003 feet. In 1935, Coast Petroleum Co. No. 1 Maco Stewart opened the Gillock area, 2½ miles southwest from a new sand at 8,100 feet which led to development of prolific production from 8,700, 8,600 and 8,100 foot sands. Including the Diadem area, the producing area centers in the F. P. Epperson, P. G. Merritt, Wm. Banks, J. S. Sherman, BBB&C, J. S. Jones, John Sellers and W. K. Wilson surveys, covering an area of approximately 3 miles wide and about the same distance in length.

Principal lease holders:

Humble Oil and Refining Co. controls the largest part of the field with the balance divided between Coast Petroleum Co., Pure Oil Co., Diadem Oil Corp. of Texas, Kenben Oil Co., Pan American Production Co., Stanolind Oil and Gas Co. and Atlantic Refining Co. Most of the present activity is centering in the Diadem and Gillock districts where approximately 7 rigs are running.

Drilling and completion methods:

With exception of Humble Oil and Refining Co. which operates its own rigs, all other drilling has been done by contract and various drilling and completion methods are employed. Drilling is comparatively easy and an average drilling time of 30 days has been established. The casing program varies. Conductor pipe ranges from 16- to 20-inch and is cemented from 50 to 225 feet. Ten and three-quarters to 13⅜-in. surface is cemented at 1,800 to 2,200 feet. In the early development, operators used a protection string of 9⅝-inch casing cemented at 6,600 to 7,400 feet, but with a better knowledge of subsurface conditions, this practice is being omitted by running a full string of 7-inch casing. The production string is cemented following the running of a Schlumberger survey and it is general practice to cement the casing on bottom and test through perforations. All wells have been brought in by washing with clear water.

Type of equipment:

Rigs are heavy duty rotaries with unitized drawworks. Steel derricks range in size from 122 to 136 feet. Power is supplied by three 125-horsepower boilers. Each rig is equipped with two mud pumps ranging from 18 to 20 inches. In the early development, control units were 3,000 and 5,000-pound test and some are still being used, although it is considered good practice to use all control units of 6,000 pound test to handle peak pressures which have ranged as high as 3,400 pounds.

Pipe lines:

The field is conveniently located to market outlets, necessitating laying of comparatively short lines. Humble Pipe Line Co. has one 8-inch line extending to the company's pump station at Webster, north of the field, while Bennett Pipe Line Co. and Pan American Pipe Line Co. operate two 6-inch oil lines to refineries at Texas City, a distance of 15 miles.

Gravity of oil:

Ranges from 34 to 41 degrees.

Spacing program:

One well to 20 acres at Dickinson; at Gillock and Diadem areas, one well to 10 acres.

Gas-oil ratio:

Average gas-oil ratio 4,900 to 1. Highest recorded 25,000 to 1, and lowest 300 to 1.

Surface pressures:

Range from 1,150 to 3,400 pounds.

Sand thickness

All production developed from the Frio sand at 7,789-8,060 feet; 8,445-50 feet, 8,510-35 feet and 9,116-40 feet.

Drilling mud

Natural mud is used from the surface to approximately 7,300 feet at which depth the weight is increased from 9 to 12 pounds.

Undrilled locations:

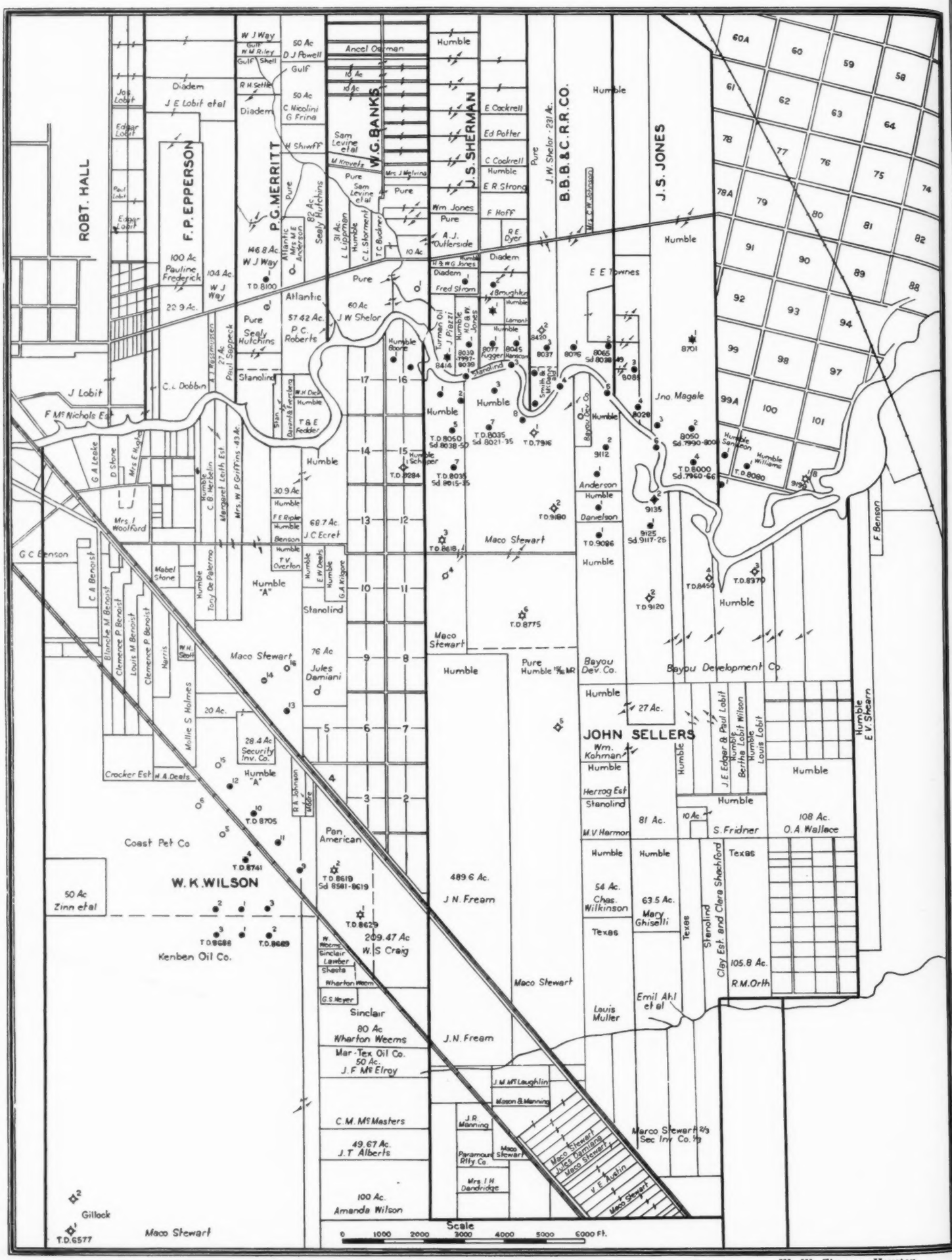
Field is undefined in many directions, particularly in the Gillock and Diadem areas where an extensive drilling campaign is getting under way.

Number of producing wells and daily average production:

For the week ending March 15, the daily average production from 48 wells was 3,400 bbls.

CRUDE ANALYSIS

CRUDE:			
A.P.I. gravity			40.2
Sulfur, per cent			.07
Color, Lovibond			1165
Cast			dark green
Flash, °F			rm. temp.
Viscosity at 100°F.			39
B.S.&W., per cent			.4
V.P., pounds			2.2
NAPHTHA:		(300°E.P.)	(400°E.P.)
Range of cut, per cent		.5-22.6	.5-36.8
Fraction, per cent		22.1	36.3
Gravity, A.P.I.		63.5	56.7
Octane No.		59	46.5
V.P., pounds		5.5	3.6
Aromatics, per cent		18.0	19.0
Sulfur, per cent		.05	.04
Per cent at 122°F		1.5	...
Per cent at 140°F		4.0	1.0
Per cent at 158°F		9.0	3.5
Per cent at 212°F		47.0	21.0
Per cent at 284°F.		95.5	50.0
Endpoint, °F		300	400
KEROSENE: (After 400° E.P. Naphtha)			
Range of cut, per cent			36.8-46.9
Fraction, per cent			10.1
Gravity, A.P.I.			41.0
R.O. viscosity			465
Sulfur, per cent			.03
Endpoint, °F			495
Tag. flash, °F			175+
	Gas oil	Lube	Bottoms
Range of cut, per cent	46.9-79.2	79.2-94.9	94.9-100
Fraction, per cent	32.3	15.7	5.1
A.P.I. gravity	34.5	27	19.2
O.C. Flash, °F	250 P-M	415	635
Fire, °F		470	...
Viscosity at 130°F		107	...
Viscosity at 210°F		46.6	423
Diesel index	60	...	...
Viscosity index		...	...
Pour, °F	20	95	...
Sulfur, per cent	.07	.2	.4
Endpoint, °F	656	...	...



—W. W. Zingery, Houston.

Dickinson field, Galveston County, Texas

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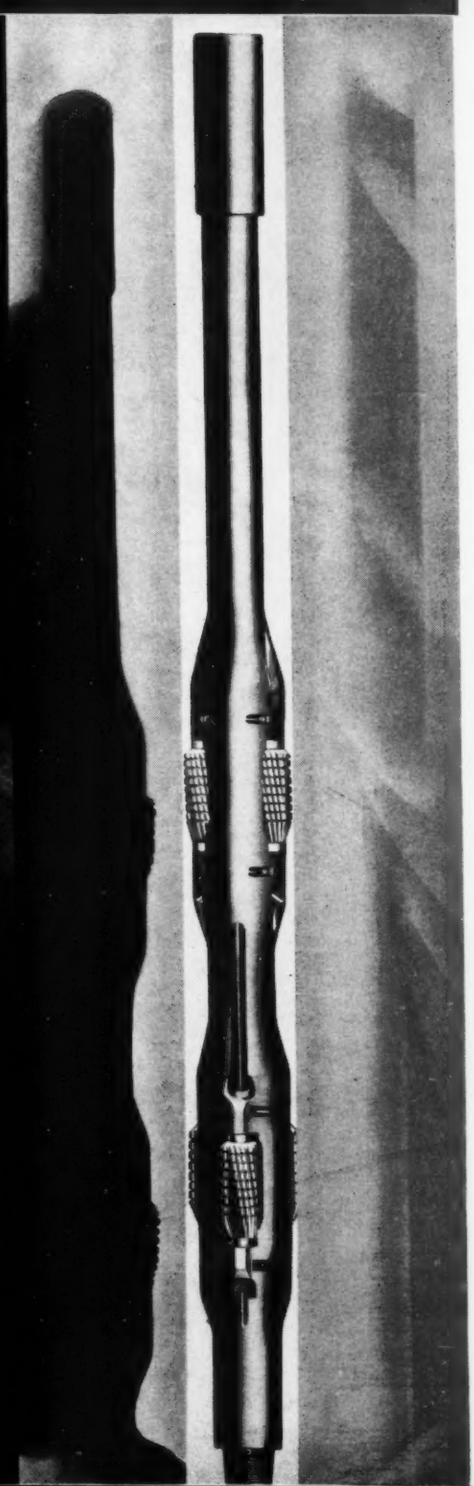

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DETAILS IN 1937 COMPOSITE CATALOG

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SERVICE ON NEW FIELDS

FLOUR BLUFF, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Flour Bluff oil field.

Geographic location:

The Flour Bluff field is located on a peninsula in southeastern Nueces County, Texas, between the Cayo del Oso and Laguna Madre. It is 10 miles southeast of Corpus Christi, joined by a good paved highway and causeway across Oso Creek.

Principal cities and towns:

Corpus Christi, a rapidly developing city, offers facilities for all phases of the industry. It is the principal port in the Lower Gulf Coast, handling large volumes of crude and refined products through three oil docks in the harbor. Large office buildings house a number of oil company offices. The city is also the center of a brisk trade in oil field supplies, with more than 25 retail stores in and around the city.

Water:

Boiler water for steam drilling rigs is found in shallow sands in the field. Approaching the Laguna, the water becomes slightly salty, needing some treating before use.

Fuel:

Gas production in the field supplies all fuel needs for steam drilling rigs.

Contractors:

At present, all drilling in Flour Bluff is done by contractors. Four firms are represented in the six rigs drilling for Humble Oil & Refining Co., Barnsdall Oil Co. and M. F. Hurlbut interests, joint holders of most of the field acreage.

Pipe lines:

Humble Pipe Line Co. has laid an 8-inch line from a tank battery in the field to the company's South Texas trunk line station at Viola, on Nueces Bay, a distance of 18½ miles.

History and development:

The lease block which now extends over most of the field structure was worked up in early 1936 by M. F. Hurlbut, an independent operator, who has long been interested in the Flour Bluff Prospect. His No. 1 Phillips, the discovery well, was begun in March, 1936, after Barnsdall Oil Co. and Humble Oil & Refining Co. became interested. The well was brought in early in July for an initial production of 216 bbls. per day on a three-sixteenths inch choke. With the exception of three small tracts held by other companies, Barnsdall, Humble and Hurlbut interests hold all acreage thus far proved to production, and have taken leases extending under the water on each side of the peninsula. To date, 27 wells have been completed, mainly in the area surrounding the discovery. The activity is moving east toward the Laguna and already one location has been staked on the submerged land for an outpost test.

Geological data:

The field is producing primarily from what is termed locally as the Phillips sand, a member of the Frio series corresponding to those sands supplying the flush production in Saxet, Plymouth, Greta, etc. The sand shows a thickness of 100 feet and is cored at approximately 6,590 to 6,690 feet. A characteristic of many of the fields opened in the Corpus Christi district is the large number of sands encountered. In some fields several horizons are producing, and the indications shown on the electrical log of the discovery well at Flour Bluff tend to bear out that expectancy with regard to Flour Bluff. Including the Phillips sand which is producing in the field, the discovery well had shows of oil and gas in nine sands above the 7,502-foot total depth.

Well completions are made by perforating casing below the middle of the 100-foot sand body, and the large overlying gas sand, coupled with the orderly development of the field, presage long flowing life for the producers. The productive area is placed conservatively at 6,500 acres, of which 4,000 acres is located under the peninsula, and the remaining 2,500 acres under the bordering submerged lands in Laguna Madre and Cayo del Oso. The structure is expected to extend further under the Laguna than to the west under Oso Creek. At the estimated recovery of 20,000 bbls. per acre, the field's ultimate production is placed at 130,000,000 bbls.

Drilling and production practices:

Heavy rotary steam rigs are used throughout the field. Surface casing is set at depths averaging 1,000 feet after which the hole is drilled to the Phillips sand at about 6,660 feet. Electrical surveys are made of the open hole before setting casing on bottom, for correlation with core logs. The casing is perforated for production in the lower section of the sand.

All wells are produced at a rate of 100 bbls. per day, the allowable set by the Railroad Commission, based on acreage. The gas-oil ratio is held at approximately 800 feet. The drilling time averages four weeks from rigging up to turning into tanks.

Spacing rules:

The wells in Flour Bluff are drilled one to each 20 acres, an arrangement which coincides with the 20-acre subdivision of the area.

CRUDE ANALYSIS

CRUDE:	
A.P.I. gravity	41 8
Sulfur, per cent	09
Color, Lovibond	200
Cast	light green
Viscosity at 100° F.	34 0
NAPHTHA:	
Range, per cent	0 6-33 0
Fraction of crude, per cent	32 4
Gravity	55 6
Octane No.	37 8
V.P., pounds	2 6
Sulfur, per cent	025
Endpoint, °F.	400
KEROSENE:	
Range, per cent	33 0-50 8
Fraction of crude, per cent	17 8
Gravity	42 8
R.O. viscosity	475
Ring No.	63
Sulfur, per cent	032
Endpoint, °F	520

	Gas oil	Lube. blend	Bottoms
Range, per cent	50 8-81 4	81 4-94 0	94 0-100 0
Fraction, per cent	30 6	12 6	6 0
Gravity	38 5	29 8	17 5
Flash, °F. (OC)	235	350	435
Diesel index	66 5	....	....
Pour, °F.	15	65	....
Sulfur, per cent	05	12	.29
Fire, °F.	....	380	....
Viscosity at 100° F.	....	73 0	....
Viscosity at 210° F.	....	36 6	124

Flour Bluff field, Nueces County, Texas

—P. Regenold, Corpus Christi.

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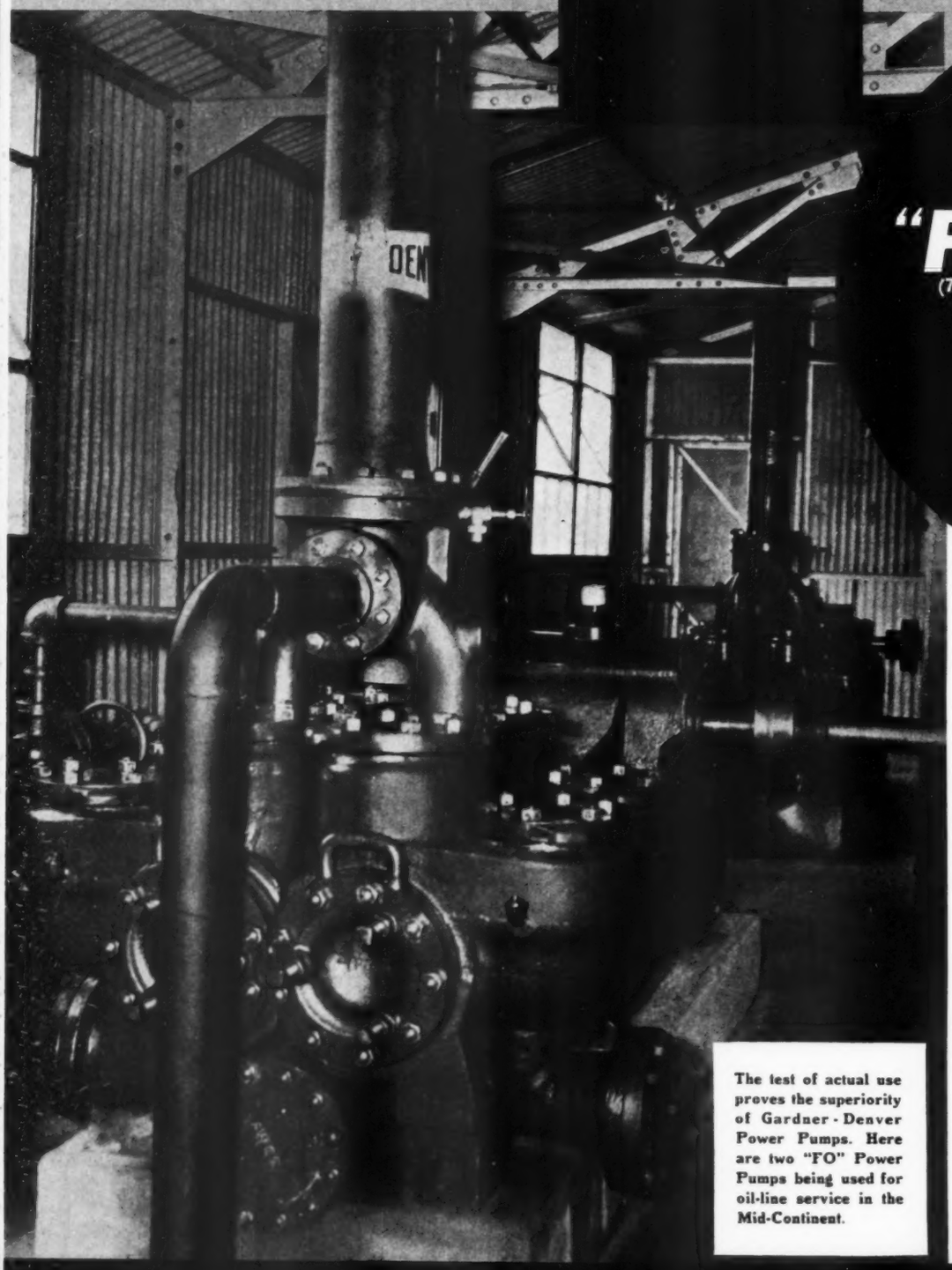

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SERVICE ON NEW FIELDS

PLYMOUTH, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Plymouth oil field.

Geographic location:

The field, situated on the Welder Ranch in north central San Patricio County is 20 miles due north of Corpus Christi and 6½ miles east of Sinton, the county seat. The structure is roughly 4 miles in length by 2½ miles at its widest point, extending in a northeast southwest trend.

Principal cities and towns:

The most accessible town is Sinton, where are located stores, hotels, restaurants, churches and oil field supply houses. Two railroads serve the town, the Missouri Pacific and Southern Pacific systems. The nearest city is Corpus Christi, which provides all the facilities of a modern city, including hotels, stores, restaurants, office buildings, railroad facilities and a deepwater port. Corpus Christi is the center of an unusually large oil field supply trade, with upwards of 25 retail outlets in the city. It is also an important crude shipping port serving several pipe line terminals and refineries.

On U. S. Highway 77 between Sinton and Refugio, and about 6 miles from the center of Plymouth, Plymouth Oil Co., major producer in the field, maintains a camp for employes. The unit comprises a small community, with field office, private homes, recreational facilities, utilities and fire protection. The field is joined to Highway 77 by a 6-mile hard surface shell road, built by field operators.

Power:

Electrical power is supplied in the field by Central Power and Light Co.

Water:

Shallow water sands throughout the field furnish a ready supply for drilling purposes.

Fuel:

The large production of casinghead gas affords fuel for steam rigs, the only type used in the field.

Contractors:

Much of the drilling is done by contract. One major contractor has three rigs active, and maintains a field office.

Pipe lines:

Three pipe lines serve the field, all converging in the Corpus Christi district. The first, a 6-inch, 20-mile welded line was laid by Republic Pipe Line Co. in 1935. During 1936 Sinton Pipe Line Co., Texas Co. subsidiary, installed one of the same size terminating at Texas Co. tank farm on Corpus Christi turning basin, adjacent to the Republic terminal. Later in 1936, Humble Pipe Line Co. included the field in its lower Gulf Coastal system with a short spur line joining the Refugio district trunk terminating at Ingleside and Harbor Island.

History and development:

The discovery well, Plymouth Oil Co. No. 1-C Welder was completed in April, 1934, for 420 bbls. per day on a one-fourth inch choke. Top of the sand, named the Plymouth sand, was cored at 5,501 feet. The location of No. 1-C Welder was determined after surveys had been made by torsion balance, magnetometer and seismograph crews, but the center of the structure according to geophysical methods did not conform to the actual high point in the sand as later developed.

Following the discovery, Heep Oil Corp. drilled No. 1 Welder, west of the discovery well. The Heep test failed to find commercial production in the 5,500-foot Plymouth sand and drilled further to be completed in sand topped at 5,579 feet. The initial production was 720 bbls. per day on a one-fourth inch choke. The second sand, which proved to be the most prolific, was named the Heep sand.

Drilling progressed in the two sands alone, until, on the south edge of the field, Magnolia Petroleum Co. completed a good producer in sand at 5,900 feet. The third or Magnolia sand has since been opened throughout the southwest portion, where the other two sands are found unproductive. In 1937, Plymouth Oil Co. discovered production on the north edge of the field in a sand at 5,900 feet. Although it is not considered to correspond to the sand at the same depth at the south end, it opens possibility of another producing horizon which may extend through much of the structure.

At present, Plymouth numbers 117 producing wells making a daily average total production of 12,960 bbls. for the field.

Drilling operations:

Four rigs are actively drilling. The major operators include Plymouth Oil Co., Heep Oil Corp., Sun Oil Co., Magnolia Petroleum Co., Humble Oil & Refining Co. and Stanolind Oil & Gas Co.

Geological data:

Only surface indications of the structure are the northward loops of Chiltipin Creek and the Aransas River. The key markers in the subsurface study are the Discorbis and Heterostegina sands of the Middle Oligocene group, which provide paleontological correlation. The structure as indicated by the tops of these formations has a strike of 25 degrees west and a southwest dip of 150 feet to the mile. Disagreement among geologists as to the identity of various sands in the field has resulted from the uneven depositional nature of the Sinton sand series at 5,200 feet to 6,300 feet.

The sand beds are believed to be shoreline deposits, probably a sand bar lying offshore, as indicated by the pinching out and fingering into shale. In the southwest section, a downthrow fault or graben is generally believed to exist. In that area, the 5,500-foot and 5,600-foot sands are unproductive, but a 5,900-foot horizon is producing in several wells. A sand at the same depth has been brought into production in the northern section, but it apparently is not the same body as that sand in the south.

The principal producing sand at 5,600 feet is whitish grey in color, averaging 22 feet in thickness with a porosity range of 24-33 per cent. The gas-oil contact is sharply defined. The estimated ultimate production of the field, including the three sands, is 23,500,000 bbls. The estimated productive area is roughly 3,500 acres.

Drilling and production practices:

The absence of any very hard formations in drilling precludes the use of rock bits, and the well defined position of the sands minimizes coring. Usual casing programs call for 350 feet of 13-inch surface casing, and 7-inch oil string set on top of the sand. The wells are drilled into the sand and completed through 2-inch tubing landed one joint off bottom. Drilling time averages less than three weeks from rigging up to turning into tanks. Production is maintained on a 24-hour schedule, generally throughout the field. The gas-oil ratio is held below 2,000.

Type of equipment:

Heavy equipment of standard type is used. Some rigs are unitized. Due to the high gas pressures encountered in the producing sands,

SERVICE ON NEW FIELDS

heavy equipment must be used, and mud must be conditioned regularly, the usual practice being to use 10½-pound and 11-pound mud. Blowout preventers are standard equipment. Two or three 125-horsepower boilers are sufficient to furnish steam for drilling.

Spacing rules:

Producers are spaced at one per 20 acres.

Natural gasoline manufacture:

Manhattan Gasoline Co., an affiliate of Clymore Properties, Inc., of San Antonio, operates a low pressure absorption natural gasoline plant in the field. The plant is capable of processing 25,000,000 feet of gas per day, and has an output in excess of 12,000 gallons per day of a 22-pound natural. The gas contains a gasoline fraction of approximately .8 gallons per 1,000 feet.

CRUDE ANALYSIS

CRUDE:		
A.P.I. gravity		31 3
Per cent sulfur		
Viscosity at 100° F.		
NAPHTHA:		
Range, per cent		0 2-27 4
Fraction, per cent		27 2
Sulfur, per cent		.02
Gravity		54 4
Endpoint, °F.		404
Octane No.		
Per cent at 212° F.		20
KEROSENE:		
Range, per cent		27 4-50 4
Fraction, per cent		23 0
Gravity		35
R.O. viscosity		
Sulfur, per cent		.05
	Gas oil	Bottoms
Range, per cent	50 4-75 4	75 4-100 0
Fraction, per cent	25 0	24 6
Gravity	25 7	13 7
Sulfur, per cent	.08	.08
Viscosity at 122° F.		300

Sample representative of field production.

TAFT, TEXAS

Approved name:

Taft field.

Geographic location:

The Taft field is located on the Taft Farm Lands Subdivision of the Welder ranch in north central San Patricio County, South Texas. It is about 1 mile south of the Plymouth field, 2½ miles north of the town of Taft, and 18 miles north of Corpus Christi.

Principal cities and towns:

(See Plymouth).

Power:

The field is serviced by Central Power & Light Co. for electrical power.

Water:

Water is found in shallow sands.

Fuel:

A ready source of fuel is the abundance of gas produced with Taft crude.

Contractors:

Drilling contractors with headquarters in Corpus Christi and San Antonio operate rigs in the field.

Pipe lines:

The same pipe lines which serve the Plymouth field, traverse the Taft field, which lies in the right of way between Plymouth and the Corpus Christi area.

History and development:

The discovery well of Taft, Geo. E. Smith No. 1 Britton, was completed in December, 1935, making an initial production of 425 bbls. per day from sand cored at 4,872-4,906 feet. Following the discovery, two tests were spudded in north and east offset locations. Both carried to the 4,900-foot sand, were failures. This temporarily dampened interest, but when the fourth test, Humble Oil & Refining Co. No. 1 Mayo, diagonally northwest of the discovery, was completed in a new sand at 3,961-75 feet, attention was revived, and since that date, a total of 40 producers has been brought in, producing from both the 3,900- and 4,900-foot sands. A third sand has also been brought into production. It is found at an intermediate depth of 4,375 feet.

Production in Taft has reached a daily average of nearly 3,000 bbls., which production is about equally divided between the 3,990 and 4,900-foot horizons. The intermediate 4,375-foot sand has not yet been developed to any extent.

Drilling operations:

At present, 5 rigs are drilling. The principal operators include, Humble Oil & Refining Co., Cage Prod. Co., Conroe Drilling Co., Shell Petroleum Corp., Esves Oil Corp. (George E. Smith), and Atlantic Refining Co.

Geological data:

Although production at Taft is coming from different sands from those producing in Plymouth, the two fields have essentially the same geological features. The 3,990-foot Taft horizon is in the Catahoula series, and the deeper 4,900-foot body is a Greta sand. The third sand is believed to enter on the flank of the producing structure of the field, pinching out on top of the structure as is often the case in shoreline deposits. The field structure is estimated to cover 500 acres, with total ultimate production in both horizons placed at 16,000,000 bbls.

Drilling and production practices:

The methods employed in developing Taft are similar to those used in the Plymouth field. With production in both major sands covering mainly the same area, twin well drilling is followed to some extent.

Type of equipment:

(See Plymouth).

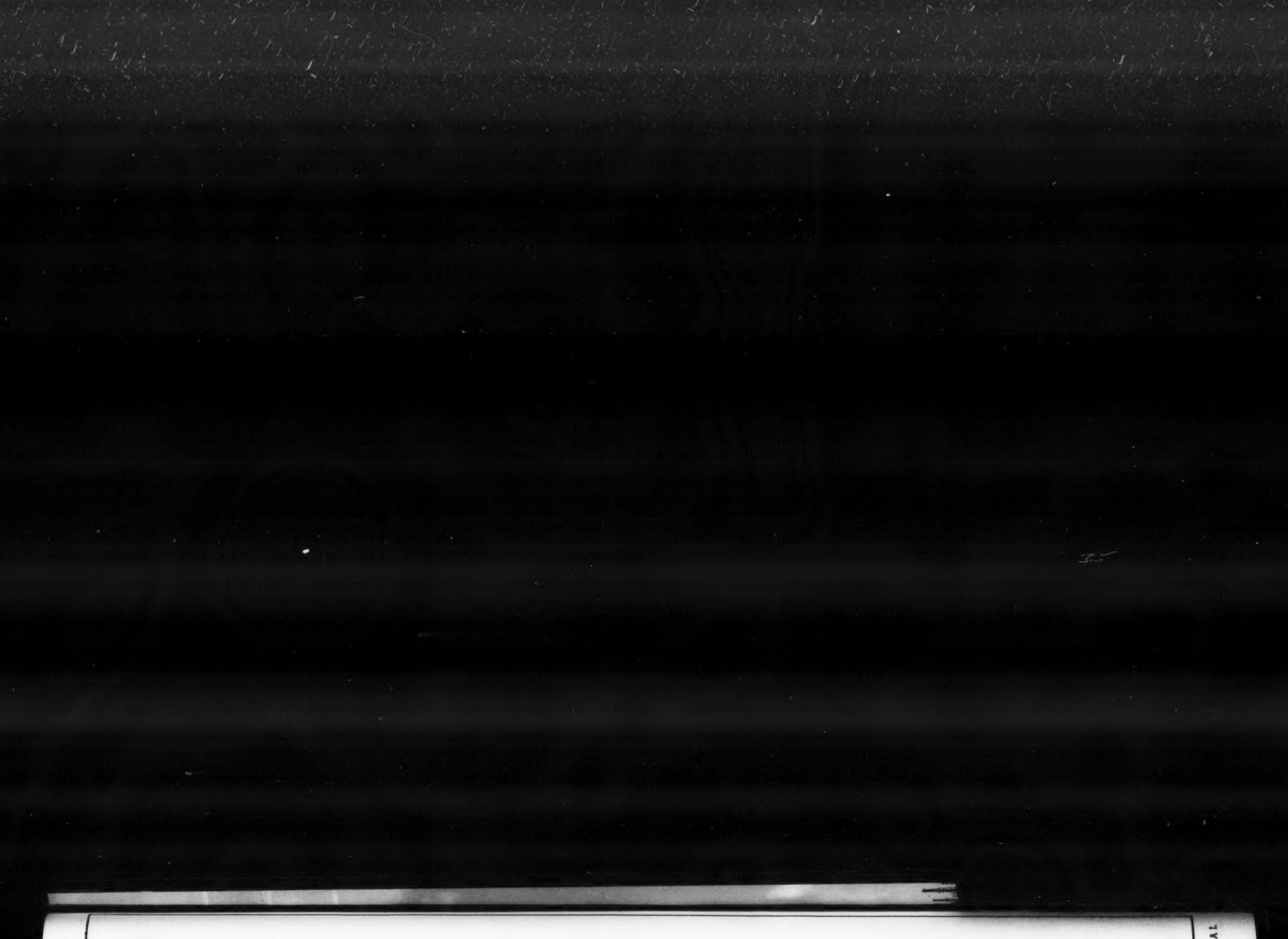
Spacing rules:

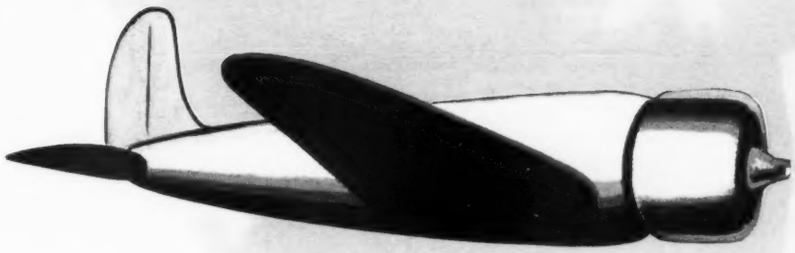
The Taft field is developed on a 10-acre spacing rule.

CRUDE ANALYSIS

CRUDE:			
A.P.I. gravity			23.5
Sulfur, per cent			.18
Color, Lovibond			11.32
Cast			dark green
NAPHTHA:			
Range, per cent			0.0-7.1
Fraction, per cent			7.1
Gravity			52.0
Sulfur, per cent			.04
Octane No.			69.8
I.B.P., °F			172
Endpoint, °F			368
KEROSENE:			
Range, per cent			7.1-27.5
Fraction, per cent			20.4
Gravity			33.6
Sulfur, per cent			.06
Endpoint, °F			490
R.O. Vis.			475
Ring No.			-29
Cu. No.			1.0
	Gas-oil	Lube. blend	Bottoms
Range, per cent	27.5-50.0	50.0-95.0	95.0-100.0
Fraction, per cent	22.5	45.0	5.0
Gravity	27.6	18.6	9.8
O. C. flash, °F	215 (P-M)	335	570
Diesel index	35.8	.....	.....
Sulfur, per cent	.11	.31	.98
Endpoint, °F	600	.....	.....
Fire, °F	.....	380	.....
Viscosity at 100°F	.....	274	.....
Viscosity at 210° F	.....	44.6	14,828
Pour, °F	.....	-25	.....

Sample from Smith No. 1 Britton, discovery well.





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BELOW GROUND IT'S—

"More feet per Tour"

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Use HUGHES *Tailor-M*

For Maximum S

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AN AIRPLANE RECENTLY MADE THE FLIGHT from Los Angeles to Newark, New Jersey, at an average speed of 332 miles per hour. Present designs of automobiles, trains, and ships emphasize speed—as never before.

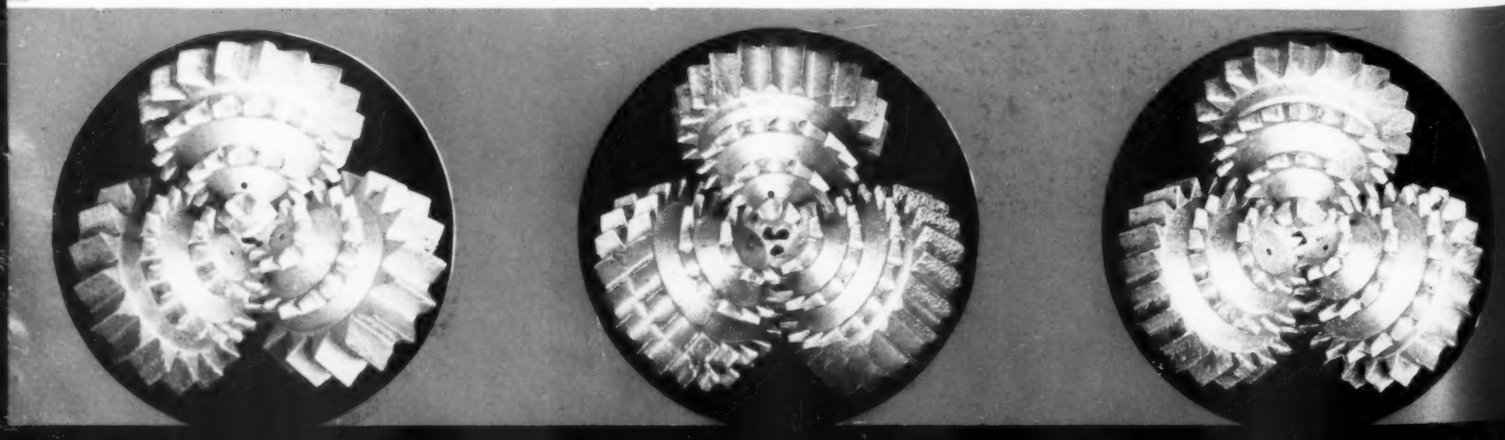
This speed in transportation is of highest commercial value only when the "average" miles per hour for the entire distance is stepped-up to a worthwhile extent—without the sacrifice of safety.

The great achievements in transportation methods would have been impossible without a dependable supply of OIL—both for fuel and lubrication—and as the demand for oil increased, *speed* in the drilling of oil wells became essential. With wells being drilled to depths of 10,000 feet or greater—this presented a real problem to the manufacturers of drilling equipment, especially to manufacturers of Rotary Rock Bits.

Hughes Tool Company met this demand in the only feasible way it could be met—by designing, producing, and proving an "Individual Rock Bit" for every Rock Bit Formation—from Broken Formations to Pyrite. It was a common sense development in Rock Bit manufacture that has paid large dividends to the drilling industry.

Yes—Hughes "Tailor-Made" Rock Bits materially shorten drilling time "from grass roots to casing seat"—increasing the "feet per tour" average and saving expensive round trips.

Just another instance where the words "Hughes" and "Speed" are linked together to the acknowledged benefit of the industry served.



Made ROCK BITS

Speed --- with Safety

FROM *Grass Roots* TO *Casing Seat*

Use HUGHES *Tailor*

For Maximum S

TODAY IS A "SPEED" AGE

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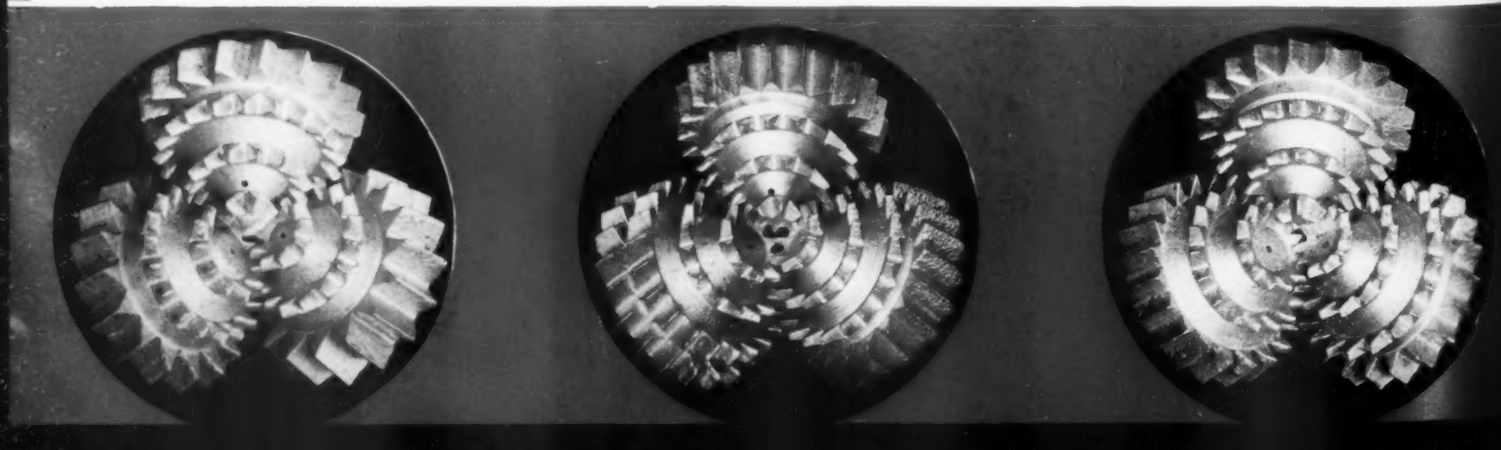

Made ROCK BITS

Speed --- with Safety

A COMMON-SENSE DEVELOPMENT IN *Rock Bit* MANUFACTURE

WHILE ANY HUGHES TRI-CONE ROCK BIT will make fair footage in any Rock Bit formation, increased drilling efficiency and lower drilling costs may be obtained by using the type of bit best adapted to a specific formation.

For shale, salt, red bed, chalk, gypsum, anhydrite, etc., Hughes "OS" Type Tri-Cone Rock Bits have "stepped up" footage per bit to an exceptional degree. Increased tooth depth, improved action on bottom, self-cleaning hard faced teeth, and effective flushing combine to add many feet of hole to each round trip—thus cutting down the bit cost per well.

Hughes "D" Type Tri-Cone Rock Bits are making enviable records for footage and speed in lime rock and shale. They have "set a pattern" for performance in lime rock territories. Fully self-cleaning, with sturdy teeth, hard faced for long life—they successfully cut interstratified layers of shale, sandy shale, gypsum, medium hard sand rock, or similar formations.

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Hughes "R" Type Hard Rock Tri-Cone Rock Bits are the last resort in such hard abrasive formations as dolomitic sand rock, chert, quartzite, iron pyrite, and similar formations. With maximum cutting surface, hard faced for long periods of operation, they answer many hard rock drilling problems.

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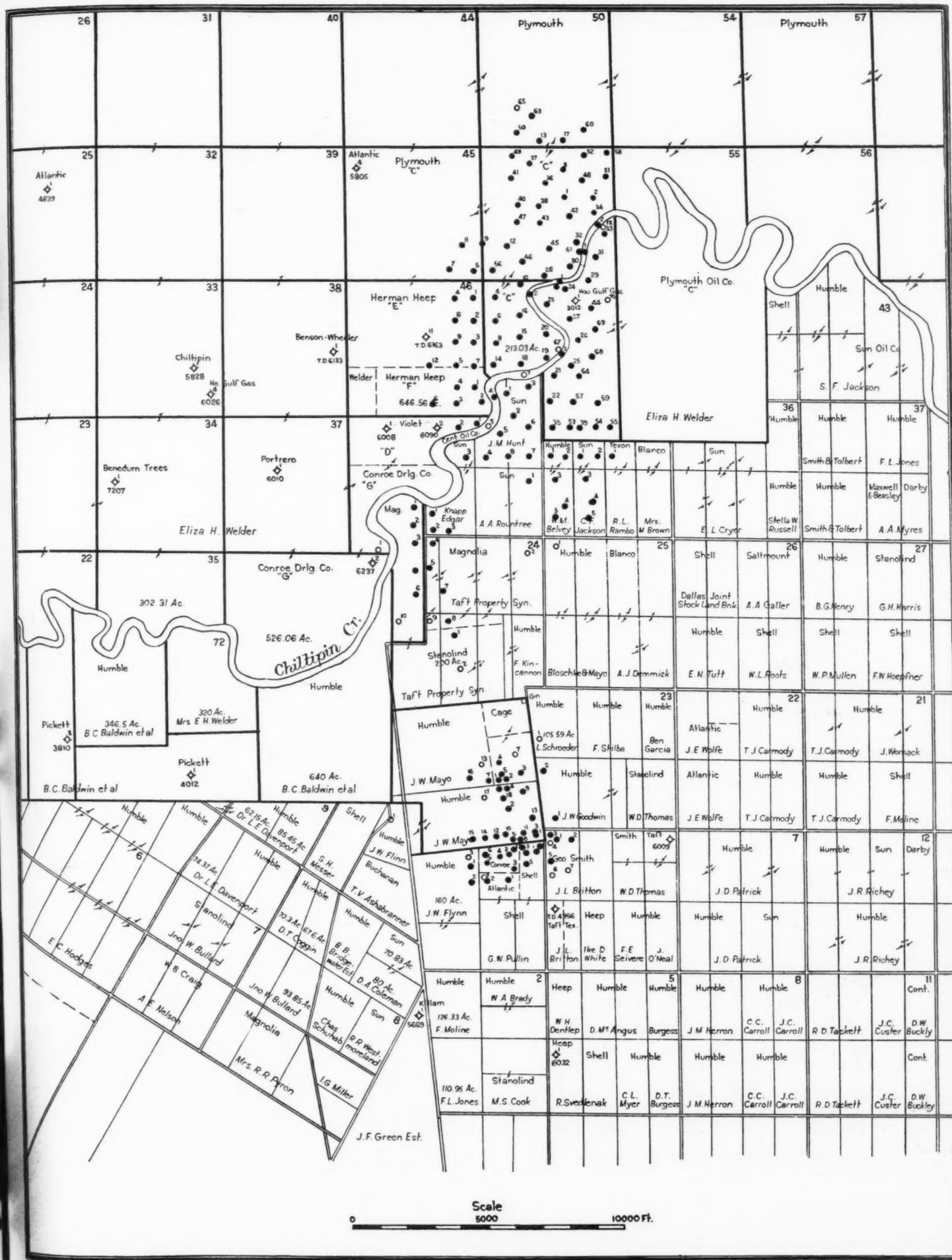
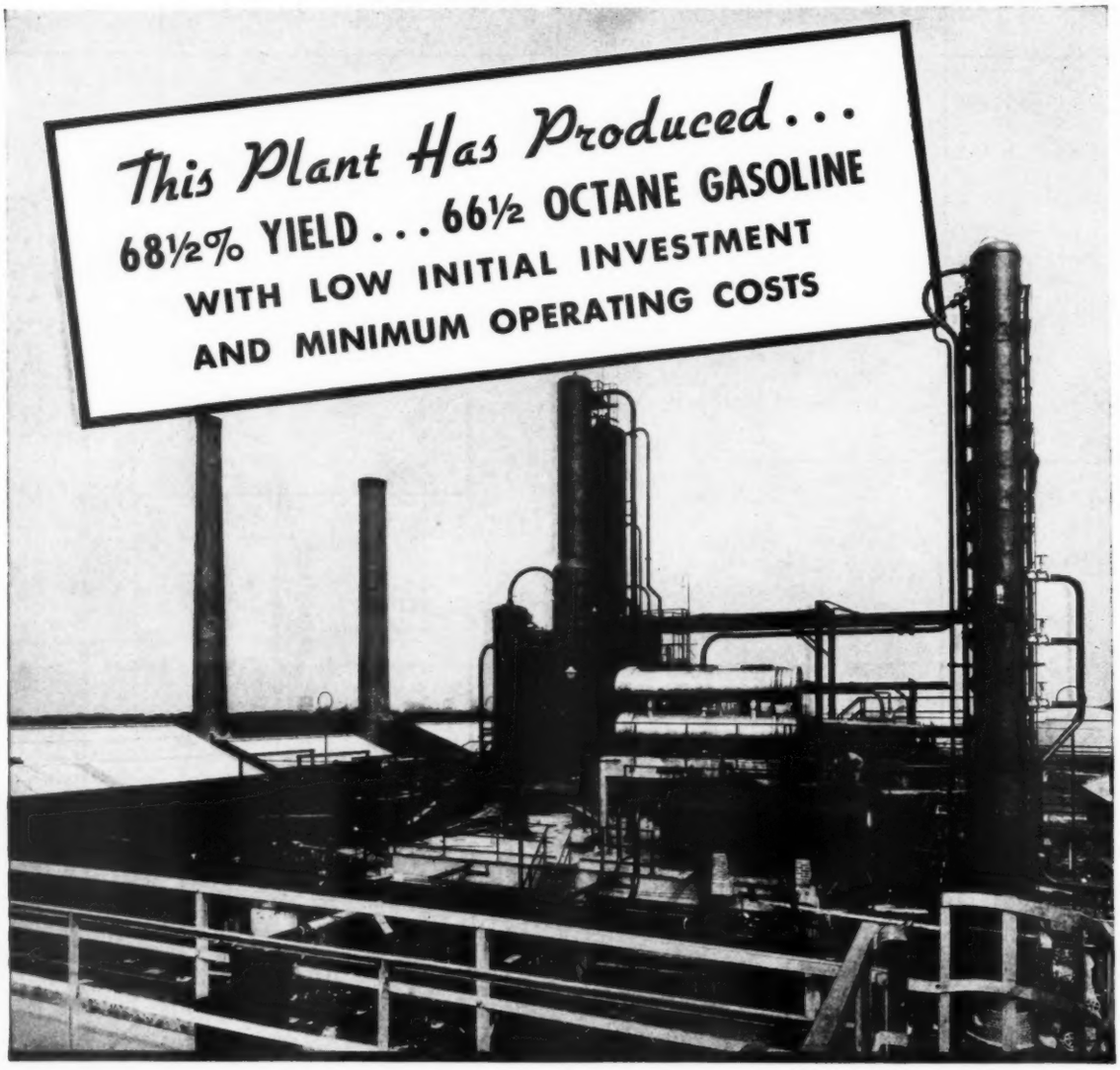
HOUSTON, TEXAS — U.S.A.



—P. Regenold, Corpus Christi.

Plymouth and Taft fields, San Patricio County, Texas



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SERVICE ON NEW FIELDS

SAXET, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

The term Saxet is given to the production of several different horizons in northeastern Nueces county. The field includes individual pools given such local names as Old Saxet, New Saxet, Deep Saxet, Clarkwood, etc., but not the Corpus Christi or Saxet Heights field which lies to the east.

Geographic location:

The Saxet field, comprising the various producing sands, lies about 6 miles due west of Corpus Christi. The field parallels Nueces Bay for nearly 5 miles, and extends 5 miles at its longest section in a north-south direction. It is traversed by three hard surface highways running west from the city.

Principal cities and towns:

Included in the bounds of the field is the town of Clarkwood, a small community supported by the surrounding farm land. The nearest city of importance is Corpus Christi, which offers every service to the oil industry.

Power:

Central Power & Light Co. serves the field with electrical power.

Water:

The shallow water sands yield water entirely unsuitable for drilling purposes, being high in sulphur and salt content. However, the city water mains of Corpus Christi, coming from Calallen, traverse a section of the field, and supply demand for boiling water.

Fuel:

Gas production in the field affords more than enough fuel for drilling purposes. Most operators utilize their own production, but those having none may obtain gas at a flat daily rate.

Pipe lines:

A number of short pipe lines connect production in the Saxet field with terminals in Corpus Christi. Houston Pipe Line Co. maintains a 7 mile, 4-inch line to its refinery at Viola. Humble Pipe Line Co. trunk line from Southwest Texas runs through a section of the field, terminating at Ingleside and Harbor Island. Fifteen miles of 4-inch line is operated by Pontiac Pipe Line Co. Potter Pipe Line Co., Inc. maintains two lines to the General American terminal near the turning basin in Corpus Christi. They consist of 10 miles of 6-inch and 15 miles of 4-inch.

Republic Pipe Line Co. joins production in the field with a terminal on the main turning basin with an 8 mile 4-inch line. Paralleling that line is one of like size operated by Saxet Heights Pipe Line Co. which ends at the Crude Oil Pipe Line Co. terminal also on the turning basin. Southern Pipe Line Corp. has laid two lines from the field; a 7 mile 6-inch crude carrier and a 6 mile 2-inch gasoline line, the latter from Southern Minerals Corp. natural gasoline plant north of Clarkwood. Both Southern lines terminate at Avery Point.

Sully Pipe Line Co. joins production in the field with the General American terminal with 8½ miles of 5½-inch line. Texas Pipe Line Co. maintains two lines to its terminal on the turning basin; an 8-inch and a 6-inch, both 8 miles in length.

History and development:

Although one of the earliest fields to be drilled in the Corpus Christi area, the Saxet field did not until recently attain the prominence which today makes it the most active drilling scene in Southwest Texas. Gas production was discovered in 1923, and during the early period of its development, the field was producing from shallow gas sands ranging 400 to 2,300 feet in depth. The first oil well was brought in during 1930. Following opening of new production in the 4,800-foot and 4,400-4,500-foot sands, termed the Deep Saxet and Clarkwood sands respectively, drilling operations picked up.

Drilling operations:

Some 28 operators are currently active in drilling. These include some of the larger integrated oil companies, but the great majority of the production is owned by small companies and independent operators. A total of 34 rigs is active. Among the outstanding companies in development are: Houston Oil Co., Southern Minerals Corp., Pan American Prod. Co., Conservative Oil Co., Republic Natural Gas Co., Richardson Petroleum Co. and Texon Drilling Co.

Geological data:

The structures of the several sands producing in Saxet do not coincide; in fact, there is no indication of the deeper Frio sand structure from the general contours of the more shallow sands. The Frio reservoir owes its existence to a fault extending generally from Viola to Clarkwood, forming closure to the west and northwest. An irregular deposition in the interval directly above the 5,800-foot sand causes that body to plunge steeply to the north and northwest, forming closure in those directions. The 5,800-foot Frio sand is characterized by a clean appearance. It is coarse to medium grained, has a porosity of 28 per cent and is grayish white in color. The body averages 25 feet in thickness and is expected to be productive over an area of about 2,250 acres. Ultimate recovery of oil in the sand is estimated at 46,000,000 bbls.

The 4,400- and 4,500-foot Clarkwood sands are productive in a general east-west structure in the southwest portion of the field. They are more shaley than the Frio sands, and are separated by a shale break. The structure is uniform with exception of portions under the townsite of Clarkwood where the 4,400-foot sand is missing.

Little is known yet of the extent of production in the 6,300-foot, 6,700-foot, and 6,900-foot sands, but a number of tests are being completed in those horizons and many more are being started, so the general picture of the structures will shortly be known. Coring and electrical surveying are used extensively. Geophysical methods have little value, because of the irregular deposition of the different strata. The total ultimate recovery of oil for the field is set conservatively at 75,000,000 bbls.

Drilling and production practices:

Drilling in the Saxet field, although possible with fishtail bits, requires heavy rigs and equipment designed to operate safely while drilling high-pressure sands. Several tests dating back to the early history of the field have blown out and cratered, charging the shallow sands with high pressure gas, and making operations, particularly for the new companies in the area, dangerous and costly.

A string of what is termed conductor casing is set at about 250-300 feet. This 16-inch casing provides something solid for the operator to tie to in case of threatened blowouts before the surface string has been landed. The surface casing is set at about 1,200 feet to case off shallow gas and water sands. The common practice in completing is to drill to the desired sand, set the oil string on bottom and perforate in the oil sand.

Heavy blowout preventers are standard equipment on all tests drilling in Saxet. The condition of the mud is also an important factor, and field rules require a minimum gravity of 11 pounds and a maximum viscosity of 30-35 seconds with a constant check to be kept on mud and blowout equipment.

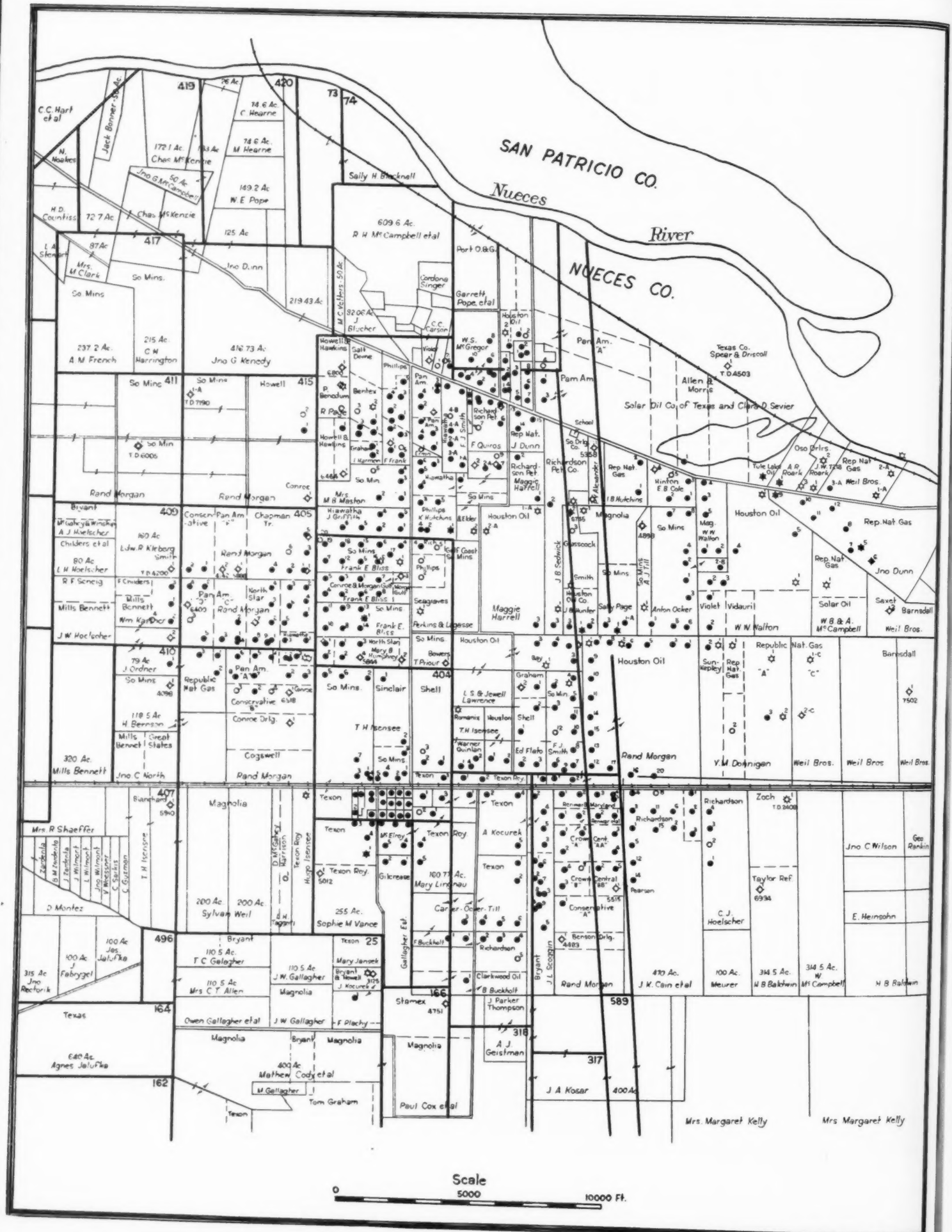
Spacing rules:

The wells in Saxet are spaced one to each 10 acres.

Natural gasoline manufacture:

Southern Minerals Corp. has recently placed in operation a low

(Continued on Page 119)



Saxet field, Texas

—P. Regenold, Corpus Christi.

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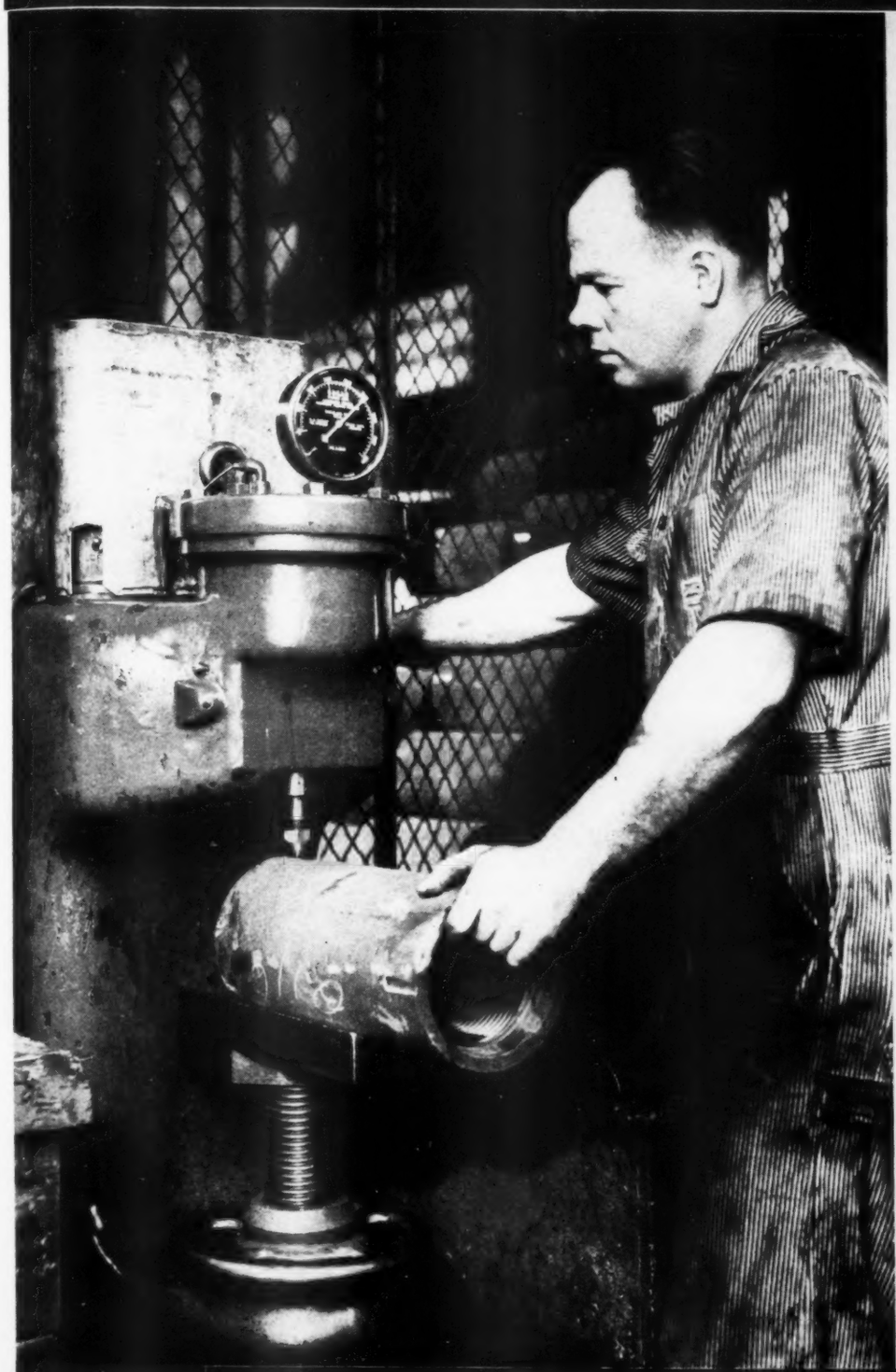

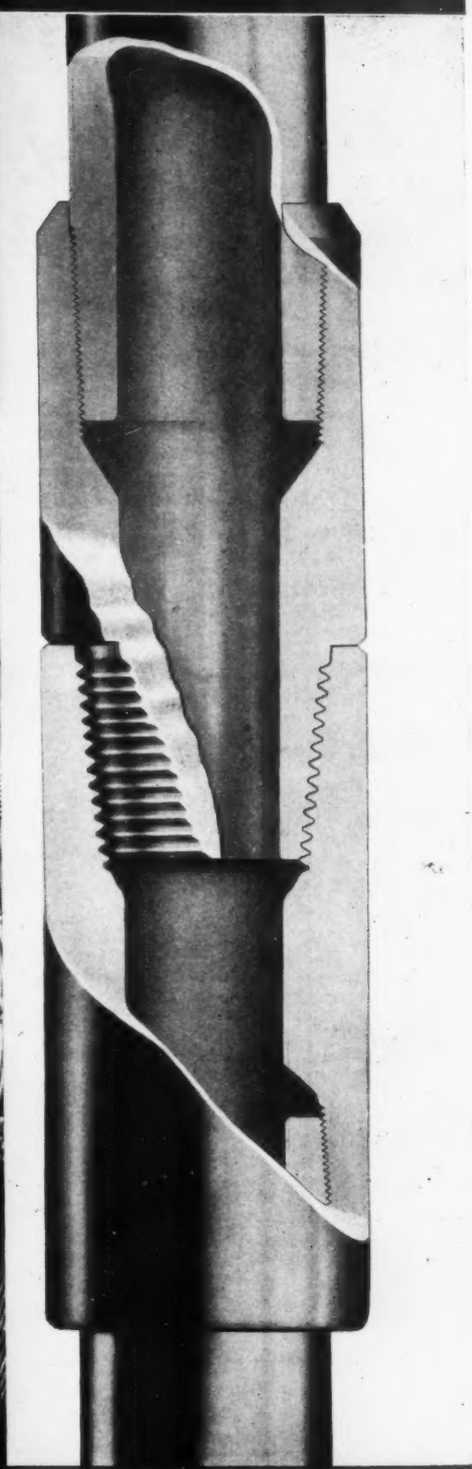

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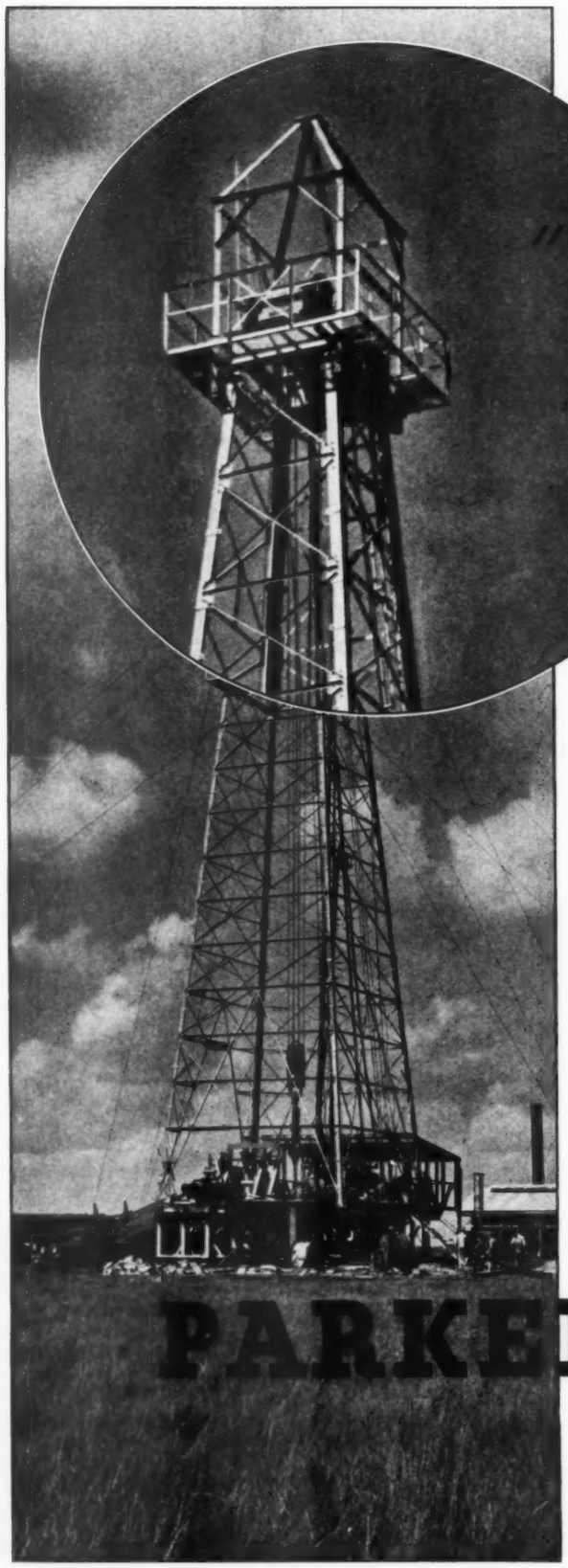

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DERRICKS

SERVICE ON NEW FIELDS

LOCKRIDGE FIELD, TEXAS

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Lockridge.

Geographic location:

The field is located in the west central part of Brazoria County, near the Fort Bend County line, centering in the J. W. Hall Survey, about 3 miles southwest of Sandy Point, just off the Angleton-Houston State Highway No. 19.

Geological data:

Believed to be a deeply seated salt dome type of structure. It was located in 1929 with torsion balance work by Gulf Oil Corp. and was rechecked with reflection seismograph by Humble Oil & Refining Co. and Shell Petroleum Corp. Production is from the Oligocene sand of the Marginulina Age. Development thus far indicates the producing sand overlies the structure in a uniform condition, although the field is in the early stages of development and all geological facts pertaining to the structure are not known at this time.

Development of field:

The discovery well was completed in August, 1936, Gulf Oil Corp. No. 1 J. E. Fairfield in the A. Robinson Survey, which was drilled to a total depth of 8,698 feet and was completed at a plugged back depth through perforated casing at 6,264 feet for an initial production of 13 bbls. of 32 gravity oil per day through a one-eighth inch choke. The completion of five additional wells has already proved a productive area of approximately 1,200 acres which has extended production to the south and southeast through the J. W. Hall Survey.

Ownership and spacing program:

Most of the acreage is controlled by Gulf Oil Corp. and Shell Petroleum Corp. The latter company gained entrance to the field by leasing from the state 400 acres of the Ramsey Prison Farm on which two wells have been completed. One well to 20 acres is being followed. Outside acreage is held by Kirby Petroleum Co., Humble Oil & Refining Co. and C. M. Lusk.

Drilling and completion methods:

The casing program calls for a surface string of 10¾-inch casing cemented at approximately 1,300 feet, followed by a production string of 7-inch casing. The production string is run following the running of a Schlumberger survey and is cemented just below the gas-oil contact around 6,300 feet. Screen and liner is run in on bottom of the tubing and the well is brought in by washing with clear water.

Gas-oil ratios and surface pressures:

The average gas-oil ratio is 4,000 feet per barrel of oil. Highest ratio was 7,000 feet to 1. Surface pressures have ranged from 240 pounds to as high as 2,500 pounds.

Sand thickness:

Oil sand is from 25 to 30 feet thick and is overlapped by a gas cap encountered below 6,200 feet. All producing wells to date have been completed at levels between 6,366-6,450 feet.

Pipe lines:

Oil is moved by Gulf Pipe Line Co.'s 4-inch line to pump station and tank farm at Almeda in Harris County, a distance of 20 miles.

Daily average production and number of producing wells:

Daily average production from four wells for the week ending March 15, was 921 bbls.

Proven acreage and number of operations:

Considering that no faults will be found in future development, the present producing area is considered to cover about 1,200 acres, but is undefined in many directions. Gulf Oil Corp. has three company rigs running while Shell Petroleum Corp. has one.

Type of equipment:

Medium heavy equipment is used by both operating companies.

Drilling equipment:

Due to lack of subsurface data, the wells are being carefully drilled and average drilling time has been around 30 to 37 days.

Drilling mud:

From the surface to the bottom of the hole 9- to 11-pound mud is used.

Completions to date:

Total completions number eight, of which six were completed by Gulf Oil Corp. and two by Shell Petroleum Corp.

Gravity of oil:

Twenty-seven gravity; color, dark green.

SAXET, TEXAS (Continued)

pressure absorption plant capable of processing 25,000,000 feet of gas per day. The company operates a gathering system tying in over 100 wells producing from the Frio sand, the only horizon which produces casinghead gas sufficiently wet to justify processing. Expected initial production of stabilized product is 10,000 gallons. The affiliated Southern Pipe Line Corp. has laid a 2-inch gasoline line from the plant to Avery Point, where natural is blended with light Saxet crude for export. Operators are reported considering installation of a carbon black plant to utilize residue gas from the plant.

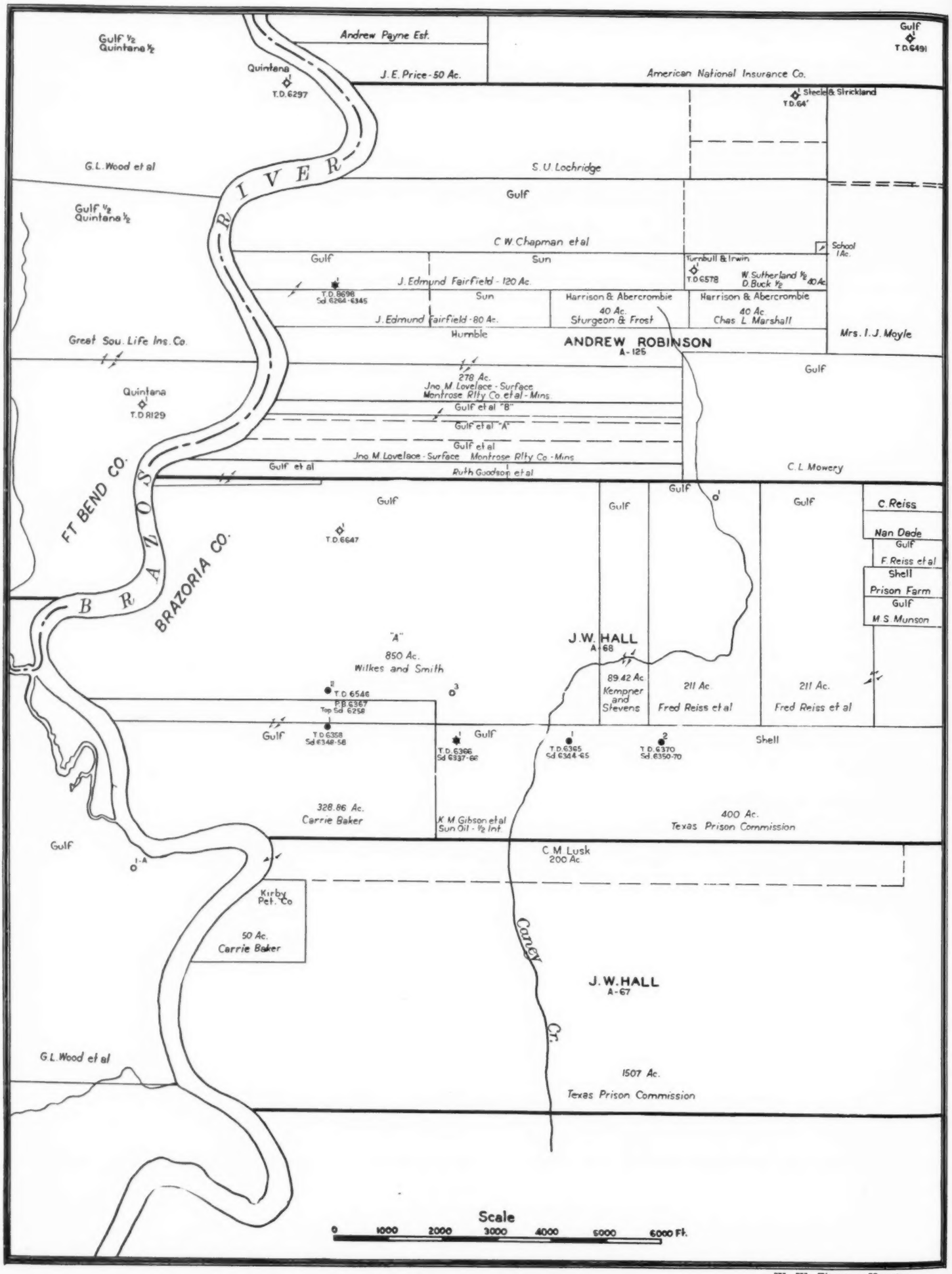
Crude analysis:

The following crude is from the Frio sand in Saxet and distinguished by the name light Saxet crude.

CRUDE ANALYSIS

CRUDE:	
A.P.I. gravity	38.4
Sulfur, per cent	.19
Color, Lovibond	220
Cast	light green
Flash	rm. temp.
Viscosity at 100°F	34
B.S. & W.	trace
V.P.	2.2
NAPHTHA:	
Range cut, per cent	0.4-40.2
Fraction of crude, per cent	39.8
Gravity	53.1
Octane No.	55.3
V.P., lbs.	3.1
Aromatics, per cent	15.0
Sulphur, per cent	.02
Per cent at 140°F	.....
Per cent at 158° F	.....
Per cent at 212°F	14.0
Per cent at 284°F	52.0
Endpoint, °F	400
KEROSENE:	
Range cut, per cent	40.2-46.2
Fraction of crude, per cent	6.0
Gravity	41.0
Sulphur, per cent	.02
Endpoint, °F	460
R. O. viscosity, °F	380
Tag. flash, °F	161

	Gas oil	Lube. blend	Bottoms
Range cut, per cent	46.2-88.2	88.2-94.0	94.0-100.0
Fraction, per cent	42.00	5.8	6.1
Gravity	32.8	21.5	11.9
Sulfur, per cent	.09	.32	.56
Endpoint, °F	660	.....	.....
O. C. flash, °F	220 (p. m.)	385	.....
Diesel index	50	.....	.....
Pour, °F	5	80	.....
Fire, °F	.....	450	.....
Viscosity at 130°F	.....	109	.....
Viscosity at 210°F	.....	44.9	337

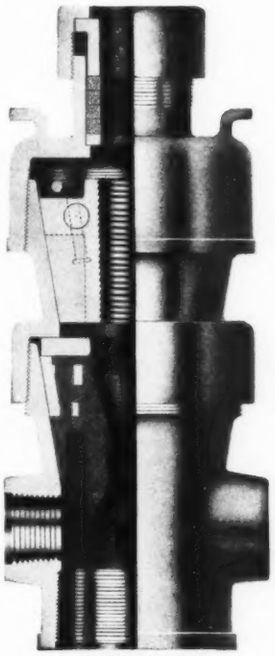


Lockridge field, Brazoria County, Texas

—W. W. Zingery, Houston.

DREADNAUGHT Stripper TUBING HEADS

FOR RUNNING AND PULLING TUBING UNDER PRESSURE *IN PERFECT SAFETY!*

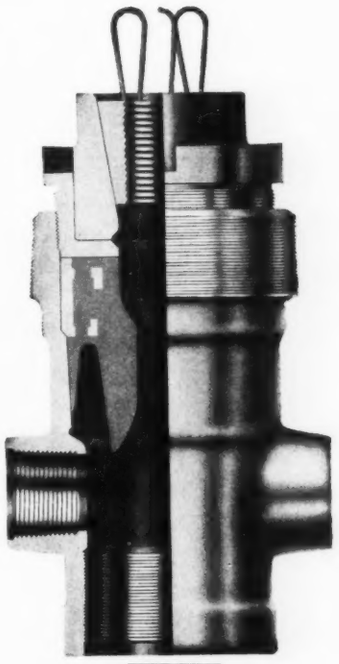


TYPE PX-23SB

The type "PX-23SB" Stripper Tubing Head is designed to permit running and pulling tubing where well pressure does not exceed 1,000 pounds. Stuffing box provided above the slips also seals in 1,000 pounds well pressure. This head is also available for 1,000 pounds working pressure without stuffing box above slips, being designated as type "PX-23S."

Now, without benefit of blowout preventer, you can run and pull tubing in perfect safety, with pressure on the well, through DREADNAUGHT Stripper Tubing Heads. A stripper rubber provided in these heads effectively seals in well pressures ranging up to 2,000 pounds, yet readily passes pipe collars. Made of the finest rubber available and moulded around solid steel rings, this packing element will outlast conventional rubber strippers because of the fact that it is under stress only to the extent of the well pressure and while tubing is being run and pulled, the entire weight of the tubing string being supported by the slips rather than by the stripper rubber. Because of its lipped design, the rubber tightens its seal around the pipe as well pressure increases.

DREADNAUGHT Stripper Tubing Heads are available in several types, the basic principle of design in each being somewhat the same, as shown in the accompanying illustrations. A regular stuffing box above the slips is available if desired, providing an auxiliary pack-off to hold well pressure in event the stripper rubber should fail due to deterioration. Fully descriptive literature will be sent upon request.



TYPE PX-65

The type "PX-65" Stripper Tubing Head permits running and pulling tubing where well pressure does not exceed 1,000 pounds. This head is also available with a stuffing box above the slips for the same pressure, and for 3,000 and 4,000 pounds test pressure with a split steel bushing which fits over and between the rubber and the tubing to reinforce the rubber.

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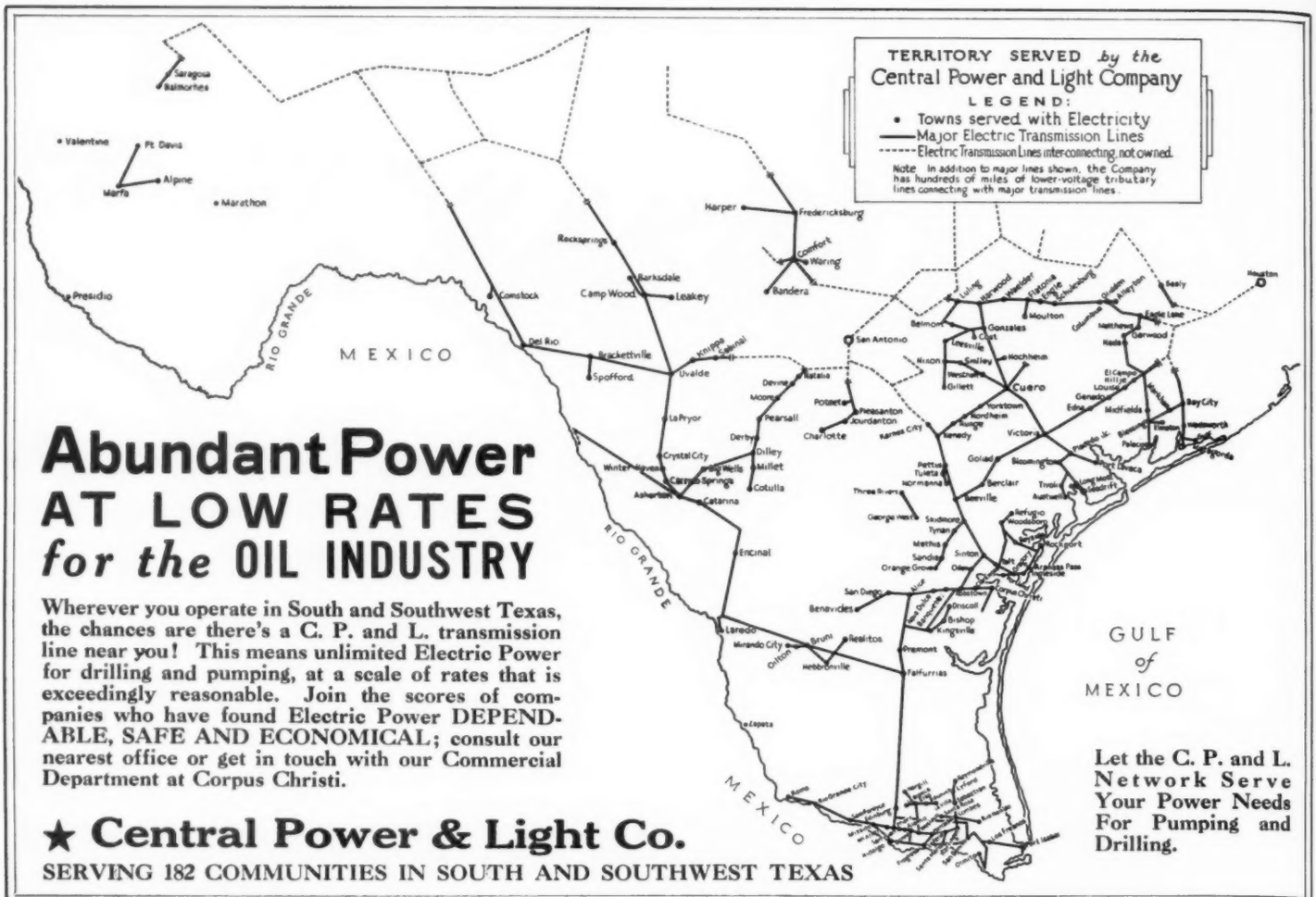
Beaumont, Houston, Dallas, Longview and Odessa, Texas; Tulsa, Oklahoma.

DNT

"Selling Through Frick-Reid Stores Everywhere"



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AT LOW RATES
for the OIL INDUSTRY

Wherever you operate in South and Southwest Texas, the chances are there's a C. P. and L. transmission line near you! This means unlimited Electric Power for drilling and pumping, at a scale of rates that is exceedingly reasonable. Join the scores of companies who have found Electric Power DEPENDABLE, SAFE AND ECONOMICAL; consult our nearest office or get in touch with our Commercial Department at Corpus Christi.

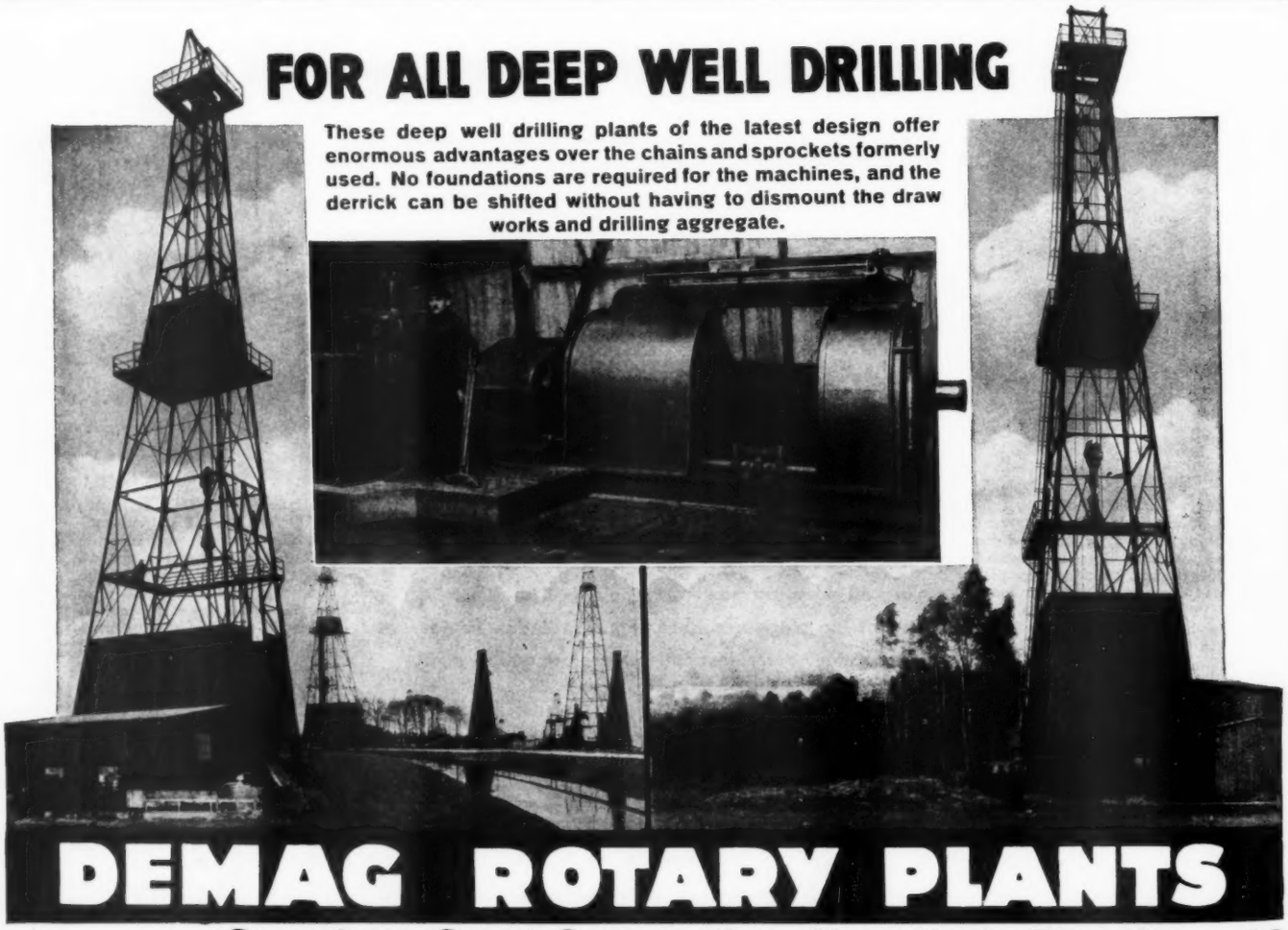
Let the C. P. and L. Network Serve Your Power Needs For Pumping and Drilling.

★ Central Power & Light Co.

SERVING 182 COMMUNITIES IN SOUTH AND SOUTHWEST TEXAS

FOR ALL DEEP WELL DRILLING

These deep well drilling plants of the latest design offer enormous advantages over the chains and sprockets formerly used. No foundations are required for the machines, and the derrick can be shifted without having to dismount the draw works and drilling aggregate.



DEMAG ROTARY PLANTS

Agents for U. S. A.: **Seamless Steel Corporation, New York, Broadway 39**

SERVICE ON NEW FIELDS

GILLIS-ENGLISH BAYOU, LOUISIANA

Compiled by The Oil and Gas Journal, April 1, 1937

Approved name:

Gillis or English Bayou.

Geographic location:

The field is located approximately 7 miles northeast of Lake Charles in the northeast corner of Calcasieu Parish, Louisiana, centering in sections 11, 12, 13 and 14 in Township 9s, Range 4w.

Geological data:

Structure is believed to be a deeply seated salt dome in which one large fault has divided production into two fields. Area was worked extensively with torsion balance, refraction and reflection seismograph instruments by Union Sulphur Co., Gulf Oil Corp. and Fohs Oil Co. The field is situated along the same salt ridge in which several fields have been found. Production is from the Marginulina sand encountered at Gillis at 6,700 feet and at English Bayou at 7,000 feet.

Development of field:

The discovery well of the Gillis field was completed in 1934 by Union Sulphur Co. No. 2 Barbe on the north bank of the Calcasieu River. Development has extended along a northeast trend with the producing limits of the 6,700-foot sand fairly well defined by dry holes to the northwest, northeast and southeast. Excessive gas pressure encountered in an outpost test, north of the field, has opened the possibilities of deeper production. One mile south, in section 13, Fohs Oil Co. opened the English Bayou area with completion of No. 1 O. H. Castle which flowed 1,500 bbls. daily from 25 feet of sand bottomed at 7,063 feet. Approximately 500 acres have been proved productive and as several dry holes have been drilled between the two areas, there is little chance of them being linked together.

Ownership and spacing program:

Union Sulphur Co., Fohs Oil Co. and Texas Co. are the principal acreage holders. No set spacing program has been followed.

Drilling and completion methods:

With three companies operating in the field, various drilling and completion methods are employed. The surface string of casing ranges from 10 to 13⅜ inches and is cemented at approximately 1,400 feet. This is followed by a production string of 5- to 7-inch casing and is cemented just below the top of the sand or at the bottom of the hole and the completion is made by setting screen and liner or through gun perforations.

Average gas-oil ratio:

From tests made on 22 producing wells at the English Bayou field, the average gas-oil ratio was 867 feet. Three wells have been shut in because of excessive high oil-gas ratios and one well is being worked over. The wells are completed through a quarter-inch choke.

Bottom-hole and surface pressures:

Bottom-hole pressure tests made in the English Bayou area on a two-hour period was 2,775 pounds as against 1,100 pounds tubing pressure and 2,150 pounds casing pressure. Flowing open bottom-hole pressure is 2,222 pounds. Another flowing bottom-hole pressure is approximately 3,195 pounds per square inch which is nearer the true pressures of these wells.

Sand thickness and porosity:

Productive oil sands at English Bayou aggregate an average thickness of 52½ feet, with porosity varying from 23 to 42 per cent. This is approximately the same thickness and porosity as at Gillis.

Character of oil:

Gravity ranges from 35 to 42 degrees. Color, dark green; sulfur 0.12 per cent; pour point 15 degrees F.; flash point below 60 degrees F.; yield 31.50 per cent gasoline; kerosene 25 per cent; gas oil 32.79; lubricating distillate 9.12 per cent; loss 2.52 per cent.

Pipe lines:

With exception of Union Sulphur Co., which operates a 14½-mile 6-inch welded oil line to its tank farm at Rose Bluff, most of the oil is moved by barges through the Calcasieu River which divides the two fields.

Production and producing wells:

For the week ending March 15, there were 55 producing wells, having a daily average production of 14,950 bbls.

Proven acreage and operations:

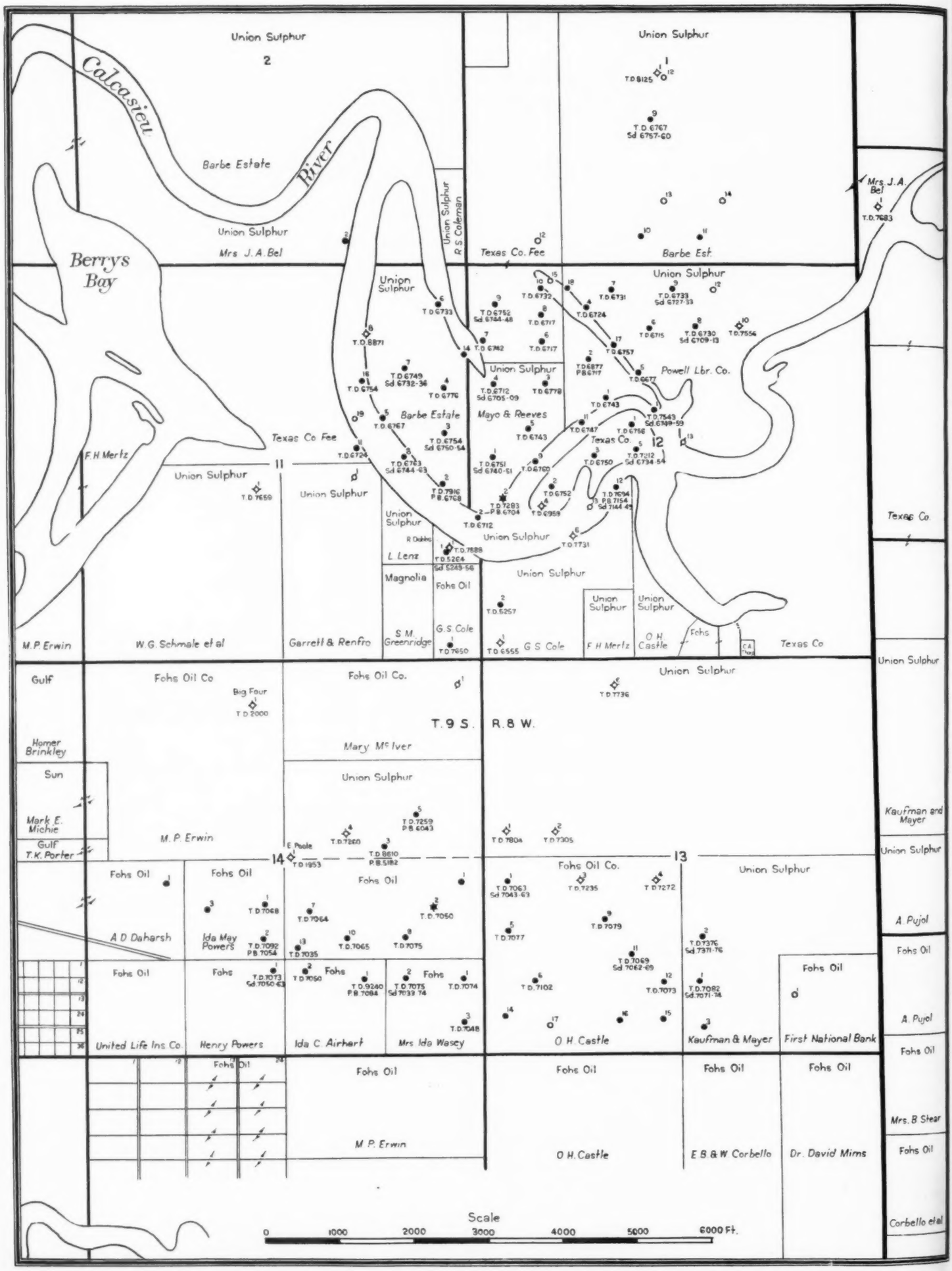
It is believed the productive acreage of both fields will be confined to approximately 4,500 acres. Five rigs are kept running. Company rigs are operated by Texas Co. and Union Sulphur Co. while Fohs Oil Co. work is done under contract. At present there are five active rigs.

Type of equipment:

Medium heavy rigs are used with unitized drawworks. Derricks range in size from 122 to 132 feet. Steam power is supplied by three 125-horsepower boilers. Two mud pumps of 14- to 18-inch sizes are in use.

Drilling time:

An average drilling time of 18 days has been established for the 6,700- and 7,000-foot wells.



Gillis and English Bayou fields, Calcasieu Parish, Louisiana

WIRE LINE DRILLING AND CORING IN ANY FORMATION WITH

REED'S *B-R* DRILLING BIT WITH WIRE LINE RETRACTABLE CORE BARREL

CORES TAKEN AT 10,000 FEET OR GREATER IN ONE HOUR—WITHOUT REMOVING THE DRILL PIPE

REED B-R SERVICE OFFERS YOU:

1. THE SERVICES OF THE REED ROLLER BIT COMPANY PLANT—One of the largest, most fully equipped Rotary Tool Manufacturing Plants in the country.
2. Day and Night Service in all localities, with Service Men available at all times.
3. Complete Hoisting Equipment on Short Notice.
4. THE HARD FORMATION BIT (Ball Thrust Type Cutter) MANUFACTURED TO THE SAME SPECIFICATIONS AS REED ROCK BITS and equal to them in every respect for speed with less weight and reserve strength under all conditions.
5. The B-R Welded-In Blade Drag Bits, 2, 3, or 4-Blade Type, are re-dressed by removing the blades with a cutting torch and welding in new blades, thus providing NEW FORGED, HEAT TREATED ALLOY STEEL, HARD SURFACED BLADES FOR EVERY RUN OF THE BIT.
6. The Reed B-R is manufactured in a number of sizes to operate in various sizes of drill pipe cutting cores from 1" to 2¼" in diameter.
7. The Reed B-R has been used to drill and core more than 2250 wells in the U. S. A., successfully recovering over 125,000 cores. The Reed B-R assures you of: faster cutting bits with more footage per bit and higher percentage of recovery.
8. The Reed B-R is now being used in Texas, Louisiana, Arkansas, Oklahoma, California, and numerous foreign fields.

REED B-R DRILL COLLAR AND 3-BLADE DRILLING BIT WITH CORE BARREL IN POSITION

HARD FORMATION DRILLING BIT WITH CORE BARREL IN POSITION INTERCHANGEABLE WITH SOFT FORMATION HEAD OR MAY BE USED WITH B-R REAMER

REED ROLLER BIT CO.

LOS ANGELES HOUSTON OKLAHOMA CITY NEW YORK

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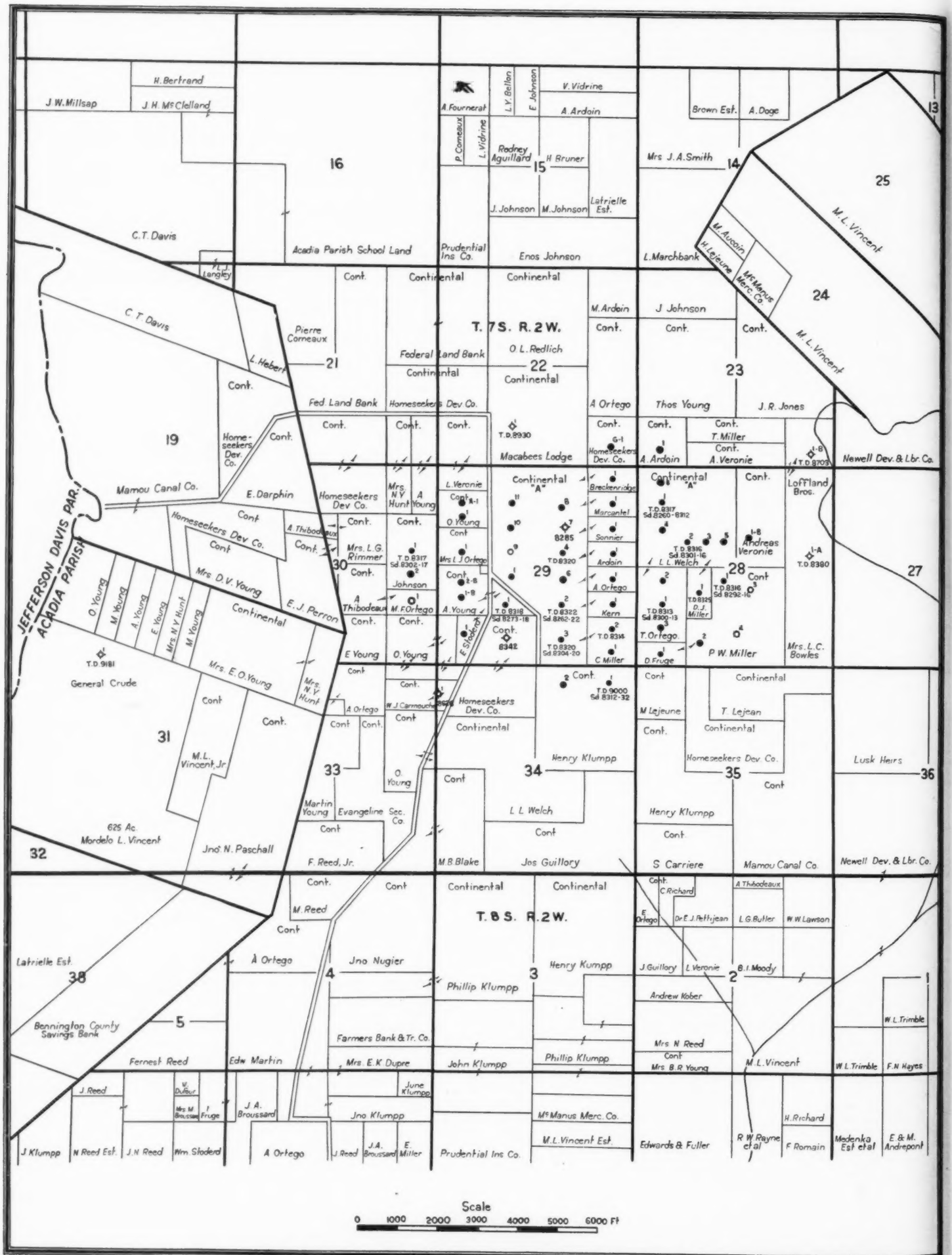


Tepetate field, Acadia Parish, Louisiana

Dependable
seismic reflection
surveys accurately
interpreted.

SEISMIC
EXPLORATIONS, INC.
HOUSTON, TEXAS

THEY CALLED

ABERCROMBIE
RED BALL
CUTTING SERVICE

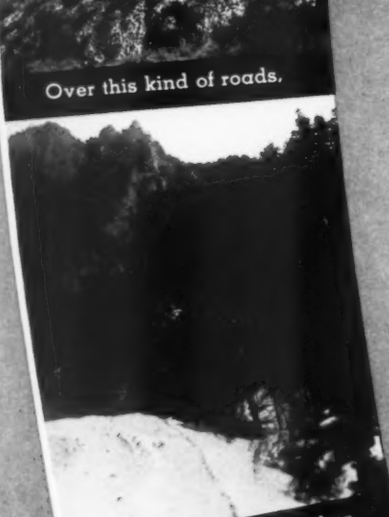
TO WYOMING

A leading Rocky Mountain operator had 6⅝" O.D. casing stuck in a Lance Creek, Wyoming, well and every effort at a successful cut with previously tried tools had failed. The RED BALL CUTTING SERVICE they'd heard so much about was 1550 miles away, and a typical January blizzard of the Northwest had the whole territory blanketed with snow and ice. But a jam's a jam in this man's oil country so far from taw, and we got the call.

H. H. "Horse" Wilkins, RED BALL CUTTING SERVICE operator, left Houston January 13th by automobile with the Abercrombie Inside Cutting Tool, pictured here. Less than five days later three cuts had been made, all necessary casing recovered and the hole cleaned to the entire satisfaction of the customer. And two days later, making a seven-day total, he was back in Houston, with 3102 miles covered.

H. H. "Horse" Wilkins drove

Over this kind of roads,



Into this kind of weather,

To this Wyoming Well,

Made 3 Inside Casing Cuts below 3400 feet,

Cleaned the hole, and was back in 7 days!

J. S. Abercrombie Co.
21st FLOOR GULF BLDG.
HOUSTON - TEXAS

RECENT DEVELOPMENTS ADDING TO RESERVES

(Continued from Page 83)

There are also 15 fields producing in excess of 10,000 bbls. each daily. Five are in the Upper Texas Gulf Coast, 4 in the Lower Texas Gulf Coast, and 6 in Coastal Louisiana:

Field—	Daily Production (bbls.)	Total Recovery January 1, 1937 (bbls.)
Conroe	47,216	71,191,063
(a) Saxet	36,022	8,017,277
New Iberia	21,500	2,862,025
Iowa	18,657	20,043,059
Caillou Island	17,498	9,813,198
Greta	14,864	14,244,747
Gillis	14,471	7,875,486
Anahuac	14,184	3,001,886
Thompson	14,086	21,769,042
Barbers Hill	13,688	56,632,836
Plymouth	13,163	3,860,457
Leesville	11,929	15,001,080
Lafitte	11,501	2,930,143
Tomconnor	10,950	1,872,408
Manvel	10,116	7,143,460
Total	269,845	246,258,167

* Based on daily average of estimated production for week ended March 25.
(a) Exclusive of Saxet Heights.

Total estimated recoverable reserves of the Gulf Coast district now are estimated at more than 3,565,550,000 bbls., of which 2,566,850,000 bbls. is claimed by the Upper Texas Gulf Coast fields, 476,000,000 bbls. by Lower Texas Gulf Coast fields, and 522,700,000 bbls. by Coastal Louisiana fields.

LOWER GULF COAST TEXAS FIELDS

Field and county—	Year discovered	Total production to Jan. 1, '37	Total tests drilled to Jan. 1, '37	aProducing wells Mar. 25, '37	Daily production Mar. 25, '37	Total rigs Mar. 25, '37
Agua Dulce, Nueces	1930	222,452	54	22	237	5
Alta Mesa, Brooks	1936	3,014	3	5	500	2
Alta Verde, Brooks	1936	2,351	9	0	0	2
Angelita, San Patricio	1934	33,691	6	0	0	0
Armagosa, Jim Wells	1931	gas	5	0	0	0
Baldwin, Nueces	1935	253,939	12	8	451	0
Bentonville, Jim Wells	1936	90,680	17	7	700	2
Burnell, Karnes	1934	gas	11	0	0	0
Caesar, Bee	1934	662,827	52	29	772	0
Church, Bee	1935	1,116	1	0	0	0
Coletto Creek, Victoria	1933	497,056	33	20	771	0
Cosden, Bee	1930	(*)	18	(*)	(*)	1
Dinero, Live Oak	1935	4,603	5	0	0	0
Dirks, Bee	1935	2,326,557	105	99	3,893	0
Flour Bluff, Nueces	1936	88,929	14	30	3,000	9
Foley, Bee	1935	3,688	4	4	153	0
Fordtran, Victoria	1934	gas	3	0	0	0
Fort Merrill, Live Oak	1935	30,126	1	1	shut in	0
Fox, Refugio	1931	(b)	13	(b)	(b)	0
Friendship, Bee	1930	gas	4	0	0	0
Grayburg, Bee	1930	(*)	15	1	shut in	0
Greta, Refugio	1933	14,244,747	245	206	14,864	10
Gulf-O'Connor, Refugio	1932	gas	2	0	0	0
Heyser, Calhoun	1936	124,505	17	31	2,900	2
Hords Creek, Goliad	1935	25,328	6		20	0
Keeran, Victoria	1932	320,958	11		317	2
Kingsville, Kleberg	1926	663,913	58		57	1
LaBlanca, Hidalgo	1936	distillate	1	2	65	0
Lamar, Aransas	1937	0	0	*0	0	1
Las Mestenas, Hidalgo	1936	246	2	1	shut in	0
La Sal Vieja, Willacy	1936	13,219	1	1	shut in	0
London, Nueces	1937	0	0	1	75	2
McCampbell, Aransas	1936	29,105	3	9	900	5
McFaddin, Victoria	1930	†249,632	29	1	5	0
McNeil, Live Oak	1930	216,973	10	5	104	0
Mercedes, Hidalgo	1935	93,271	11	2	9	0
Mount Lucas, Live Oak	[5]1931	213,595	67	12	125	0
Normanna, Bee	1930	(*)	10	1	10	0
North Pettus, Goliad	1930	(*)	(*)	69	2,013	3
Oakville, Live Oak	[5]1936	gas	2	1	40	1
O'Connor (Humble), Refugio	1931	(†)	18	4	245	0
[1]Palangana, Duval	1928	4,000	2	0	0	0
Pettus, Bee	1930	[3]8,833,005	220	38	1,319	0
Pickett, Live Oak	1920	gas	11	0	0	0
[1]Piedras Pintas, Duval	1925	196,682	59	0	0	0
Placedo, Victoria	1935	1,490,697	108	109	7,666	7
Plummer, Bee	1936	small	1	1	20	1
Plymouth, San Patricio	1935	3,860,457	121	119	13,163	7
Port Lavaca, Calhoun	1934	366,805	18	10	310	0
Premont, Jim Wells	1933	3,840	5	7	350	0
Ray, Bee	1935	878,441	43	41	1,435	0
Refugio, Refugio	[5]1928	33,662,206	0	109	6,285	0
Rutledge, Bee	1935	7,840	5	2	13	0
Sandia, Jim Wells	1929	gas	11	1	75	1
Saxet, Nueces	[5]1930	8,017,277	313	384	36,022	47
Saxet Heights, Nueces	1935	2,229,504	228	221	9,800	10
Sevier (Clara Driscoll), Nueces	1935	86,067	14	12	1,120	4
Sinton, San Patricio	1934	70,328	11	3	29	0
Slick, Goliad	1930	55,559	10	1	75	1
Stratton, Nueces	1931	gas	1	0	0	1
Sullivan, Nueces	1936	blowout	4	1	20	1
Sweden, Duval	1937	0	0	1	125	3
Taft, San Patricio	1935	355,086	32	42	3,560	6
Tomoconnor, Refugio	1934	1,872,408	87	109	10,950	2
Tuleta, Bee	1932	(*)	(*)	(*)	(*)	0
Voss, Bee	1936	44,030	13	7	234	0
Weiss, Bee	1930	gas	4	0	0	0
Weser, Goliad	1936	gas	1	1	20	0
W. Premont, Jim Wells	1936			(‡)	(‡)	8
West Tuleta, Bee	1934	1,388,050	(*)	41	805	0
White Point, San Patricio	1930	77,100	60	2	135	1
Total		83,921,903	2,263	1,847	125,757	148

[1]Proved salt domes.
[3]Includes Cosden, Grayburg, Normanna, North Pettus and Tuleta.
[5]Discovery well blew out; being worked over.
[5]Year of first oil production; fields produced gas previously.
†McFaddin and Humble-O'Connor production not segregated.

*Included in Pettus.
‡Included in Premont.
a Gas wells not included.
b Fox production.

Equipment BARGAINS

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SIZES RANGING FROM 1" TO 20" PIPE

LARGEST STOCK OF CASING TOOLS ON THE GULF COAST

SPECIAL BARGAINS FOR SALE

2—14½" x 7¼" x 20" Gardiner Slush Pumps.
2—H-15000, 15½" x 7¾" x 18" Lucey Slush Pumps.
1—14½" x 7¼" x 18" Ideal Slush Pump.
4—10" x 4½" x 10" Boiler Feed Pumps.
10—10" x 3½" x 10" Boiler Feed Pumps.
3—105 H.P., 250-Lb. W.P. Lucey Boilers, like new.
4—New 30 H.P. Emsco Gas Engines.
2—New 45 H.P. Emsco Gas Engines.
1—New 55 H.P. Emsco Gas Engine.

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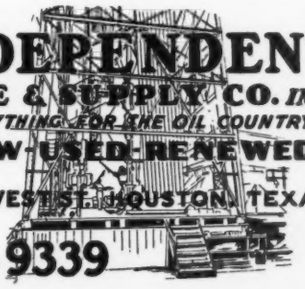

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EVERYTHING FOR THE OIL COUNTRY
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LOW COST PUMPING IS NOT AN ACCIDENT

—it must be planned for

First, engineers who know oil field needs, complete the design. A metallurgist selects material to resist wear and corrosion. Then come machine tools accurate to the 1/1000th part of an inch.

This planning done, expert oil country machinists make and assemble the parts into an O'Bannon pump.

When a producer equips a lease with O'Bannon pumps, as did the Blackwell Oil and Gas Co. at Seminole, Oklahoma, a statement such as the following may be made. O. W. Pollet, farm boss for the Blackwell Oil and Gas Co., said:

"During the January-February blizzard, I did not have a single well down."

When you use an O'Bannon pump you receive service that was planned for.

Sold by

Supply Stores

WALTER O'BANNON COMPANY

Tulsa, Oklahoma

O'BANNON PUMPS

LOUISIANA GULF COAST FIELDS

Field and parish—	Year discovered	Total production to Jan. 1, 1937	Total tests drilled to Jan. 1, '37	Total producing wells drilled to Jan. 1, '37	Producing wells Mar. 25, '37	[1]Daily production Mar. 25, '37	Total rigs Mar. 25, '37
Anse La Butte, St. Martin	1902	1,012,339	107	30	4	235	1
Avery Island, Iberia	*1862	0	3	0	0	0	0
Bay Junop, Terrebonne	*1934	0	8	0	0	0	0
Bayou Blue, Iberville	1929	75,745	16	7	0	0	0
Bayou Bouillon, St. Martin	1928	439,837	49	9	1	shut in	1
Bayou Cocotriz, Terrebonne	1937	0	1	1	1	918	1
Bayou Des Glaise, Iberia	*1929	0	6	0	0	0	0
Bayou Mallet, Acadia	1936	57,028	8	5	4	252	1
Bay St. Elaine, Terrebonne	1929	small	24	3	0	0	0
Belle Isle, St. Mary	*1896	0	[2]32	0	0	0	0
Big Lake, Cameron	1936	5,564	4	1	1	4	1
Black Bayou, Cameron	1929	3,442,284	49	23	17	3,454	1
Bosco, Acadia-St. Landry	1934	12,011,092	78	67	58	9,167	0
Caillou Island, Terrebonne	1930	9,813,198	44	28	24	17,498	1
Calcasieu Lake, Cameron	*1928	0	9	0	0	0	0
Cameron Meadows, Cameron	1931	3,487,191	45	36	29	4,353	2
Cankton, St. Landry	1936	500	2	2	2	39	1
Catahoula, Lafourche	*1927	0	38	0	0	0	0
Charenton, St. Mary	1936	23,661	2	2	2	458	2
Cheneyville, Rapides	1935	169,432	8	6	5	385	0
Choctaw, Iberville	1931	1,292,453	10	7	8	1,156	1
Cote Blanche, St. Mary	*1921	0	[2]64	0	0	0	0
Darrow, Ascension	1932	793,181	17	9	5	1,746	1
Dog Lake, Terrebonne	1929	282,537	17	3	2	1,200	1
East Hackberry, Cameron	1927	14,514,064	119	63	48	9,331	3
Edgerly, Calcasieu	1912	9,277,936	250	174	18	175	0
Fausse Point, Iberia	1927	1,737	20	3	1	9	1
Four Isle, Terrebonne	1934	293,096	13	2	1	47	1
Garden Island, Plaquemines	1934	435,580	19	6	5	1,600	1
Gillis-English Bayou, Calcasieu	1934	7,875,486	93	76	57	14,471	5
Gueydan, Vermilion	1932	637,021	13	5	3	215	0
Hester, St. James	*1936	0	2	0	0	0	0
Houma, Terrebonne	(f)	gas	12	[3]3	0	0	0
Iowa, Calcasieu-Jeff Davis	1931	20,043,059	79	7	51	18,657	1
Jeanerette, St. Mary	1935	964,891	16	15	15	5,385	3
Jefferson Island, Iberia	*1895	0	10	0	0	0	1
Jennings, Acadia	1901	76,196,805	538	112	52	3,955	7
Lafitte, Jefferson	1935	2,930,143	11	11	11	11,501	2
Lake Barre, Terrebonne	1929	14,953,357	55	39	25	7,843	1
Lake Hermitage, Plaquemines	1934	52,998	14	3	2	45	1
Lake Mongouloi, St. Martin	*1936	0	2	0	0	0	1
Lake Pelto, Terrebonne	1929	408,785	12	3	2	503	1
Lake Washington, Plaquemines	1931	1,639,179	22	9	11	1,684	0
Leesville, Lafourche	1931	15,001,080	103	19	91	11,929	3
Lockport, Calcasieu	1924	13,950,398	112	23	22	1,374	1
Marchland, Lafourche	*1936	0	2	0	0	0	1
Napoleonville, Assumption	*1926	0	[2]16	0	0	0	0
New Iberia, Iberia	1917	2,862,025	46	25	25	21,500	5
Old Hackberry, Cameron	1928	2,411,024	156	54	25	2,715	8
Pine Prairie, Evangeline	1912	20,000	35	4	0	0	0
Port Barre, St. Landry	1929	5,136,254	70	48	30	2,050	0
Roanoke, Jeff Davis	1934	4,157,213	42	28	27	6,411	1
Section 28, St. Martin	*1918	0	13	0	0	0	0
Sorrento, Ascension	1928	727,094	26	10	2	238	2
South Jennings, Jeff Davis	1936	682	1	1	1	shut in	0
Starks, Calcasieu	1927	2,415,591	77	30	19	570	1
St. Martinsville, St. Martin	1935	337,971	6	2	1	215	1
Sulphur, Calcasieu	1926	9,949,867	123	98	62	4,421	3
Sweet Lake, Cameron	1926	3,193,984	15	8	6	870	0
Tepetate, Acadia	1935	1,594,421	47	43	41	5,553	4
Valentine, Plaquemines	1936	(a)	4	1	2	1,041	2
Vermilion Bay, Iberia	*1928	0	6	0	0	0	0
Venice, Plaquemines	*1931	0	3	0	0	0	1
Vinton, Calcasieu	1910	43,557,626	629	434	72	1,437	0
Weeks Island, Iberia	*1897	0	5	0	0	0	0
Welsh, Jeff Davis	1902	553,092	110	67	17	35	0
White Castle, Iberville	1929	1,810,434	12	9	7	1,347	1
Total		290,808,935	3,600	1,674	915	177,992	78

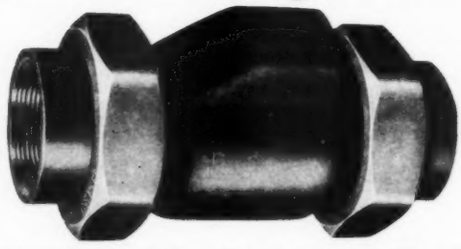
MISSISSIPPI GULF COAST FIELDS

Lamar, Lamar County	*1937	0	0	0	0	0	1

[1]Based on average of estimated production for week ended March 25.
[2]Includes salt or sulfur tests—no segregation from oil or gas tests.
[3]Includes two gas wells.
[4]Gas wells.
*Unproductive known salt domes; discovery year represents year salt first known.
†Not known.
a Field opened close of year—no production reported.

CATAWISSA
Double Union Swing Check Valves

Easily accessible — can be cleaned or repaired with practically no loss of time.



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Ask for Bulletin 6

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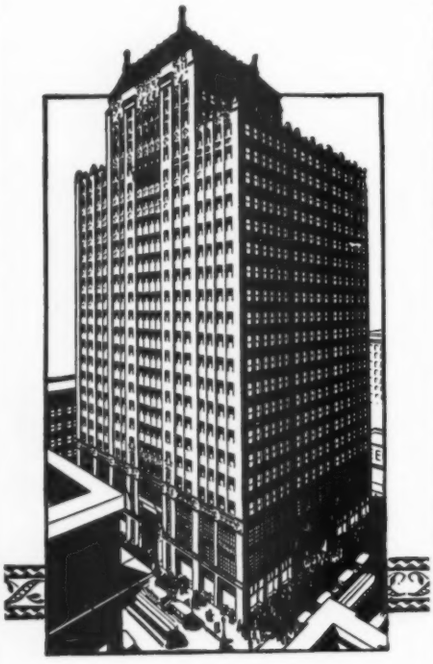

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SAN ANTONIO

MEMBER

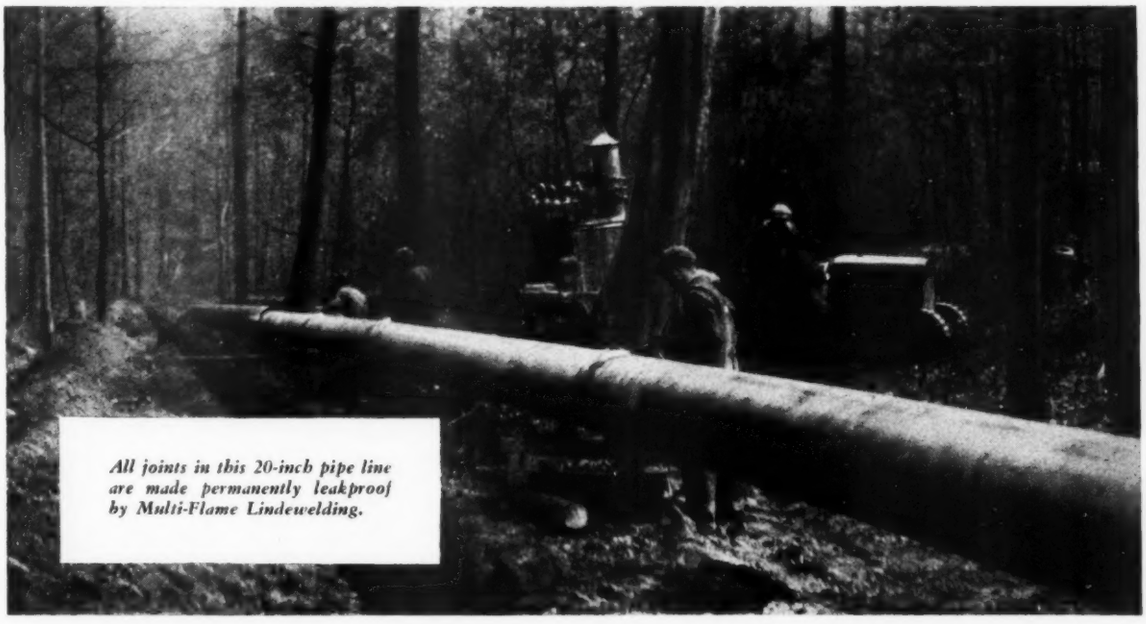
FEDERAL DEPOSIT INSURANCE CORPORATION

UPPER TEXAS GULF COAST FIELDS

Field and county—	Year discovered	Production to Jan. 1, 1937	Tests drilled to Jan. 1, '37	Producers drilled to Jan. 1, '37	Producing wells Mar. 25, '37	[1]Daily production Mar. 25, '37	Total rigs Mar. 25, '37
Ace, Polk	1934	60,127	8	4	3	214	1
Allen, Brazoria	1927	77,421	32	4	1	0	0
Amelia, Jefferson	1936	200,498	27	19	20	1,705	8
Anahuac, Chambers	1935	3,001,886	165	153	159	14,184	6
Arriola, Hardin	1932	1,383,863	28	17	13	602	0
Barbers Hill, Chambers	1916	56,632,836	567	392	178	13,688	1
Batson, Hardin	1903	37,367,564	1,415	1,188	209	1,850	0
Big Creek, Fort Bend	1922	8,900,760	138	72	27	1,157	2
Big Hill, Jefferson	1923	17,111	50	3	1	25	1
Big Hill, Matagorda	1902	203,589	127	75	0	0	0
Blue Ridge, Fort Bend	1919	10,211,302	316	183	56	870	2
Boling, Fort Bend-Wharton	1923	6,428,891	445	328	86	1,176	3
Brenham, Washington	1915	251,781	93	70	21	28	0
Brookshire, Waller-Austin	1934	17,178	18	1	1	5	0
Bryan Mound, Brazoria	*1901	0	19	0	0	0	1
Buckeye, Matagorda	1932	597,742	6	2	2	114	1
Clay Creek, Washington	1928	3,655,907	106	78	51	1,096	2
Clemons, Brazoria	*1926	0	15	0	0	0	0
Cleveland, Liberty	1933	709,129	22	17	9	715	1
Clinton (Greens Bayou), Harris	1936	2,285	1	1	1	26	1
Conroe, Montgomery	1931	71,191,263	1,034	968	930	47,216	4
Cotton Lake, Chambers	1936	34,099	14	9	10	971	1
Damon Mound, Brazoria	1915	8,783,413	274	123	34	423	1
Danbury, Brazoria	1929	3,403	14	2	0	0	0
Davis Hill, Liberty	*1905	0	43	0	0	0	0
Dickinson, Galveston	1934	1,007,468	68	62	49	3,490	10
Edna, Jackson	1921	gas	18	1	0	0	0
Esperson, Liberty	1929	4,200,756	79	51	41	2,126	1
Eureka, Harris	1934	8,759	5	2	1	35	0
Fairbanks, Harris	1936	26,845	4	4	3	409	0
Fannett, Jefferson	1927	1,960,968	55	24	18	716	1
Five Corners, Wharton	1936	925	5	4	4	12	1
Garwood, Colorado	1932	1,000	11	0	0	0	0
Genoa, Harris	1929	gas	4	1	0	0	0
Goose Creek, Harris	1906	72,981,331	971	639	96	2,721	0
Greens Lake, Galveston	1936	23,166	7	2	2	39	1
Hankamer, Liberty	1929	4,308,283	56	38	33	1,647	1
Hardin, Liberty	1935	184,236	3	1	1	365	0
Hastings, Brazoria-Galveston	1934	3,030,898	148	1	448	13,131	16
Hawkinsville, Matagorda	1936	2,466	19	2	2	shut in	1
High Island, Galveston	1922	13,178,161	213	100	54	3,513	3
Hitchcock, Galveston	1937	gas	1	0	0	0	1
Hockley, Harris	1933	16,930	71	4	0	0	1
Hoskins, Brazoria	1904	31,755	45	6	0	0	0
Hull, Liberty	1918	81,949,530	897	715	176	6,132	5
Humble, Harris	1905	119,878,191	1,569	1,247	220	3,285	2
Katy, Waller	1935	gas	1	1	0	0	0
Kittrell, Houston	1934	778,308	24	12	13	869	0
Labelle, Jefferson	1937	0	2	1	1	41	1
Lakeview, Wharton	1936	gas	3	2	0	0	0
Liberty, Liberty	1925	27,357,489	429	286	37	560	0
Livingston, Polk	1932	3,207,844	121	88	88	3,149	0
Lockridge, Brazoria	1936	2,254	5	4	4	312	4
Long Point, Fort Bend	*1928	0	66	1	0	0	0
Lost Lake, Chambers	1929	854,062	32	13	8	178	0
Louise, Wharton	1933	1,145,134	40	37	37	1,829	0
Magnet, Wharton	1936	3,707	1	1	1	37	0
Manvel, Brazoria	1931	7,143,460	172	149	133	10,116	4
Markham, Matagorda	1908	3,318,079	267	126	36	1,720	3
Mauritz, Jackson	1935	64,124	5	1	1	96	1
Moss Bluff, Liberty	1930	205,825	60	6	0	0	0
Mykawa, Harris	1929	2,331,775	48	36	31	2,371	1
Nash, Brazoria-Fort Bend	1926	1,691,516	76	29	1	46	0
Nome, Jefferson	1936	52,119	16	14	15	1,295	4
North Dayton, Liberty	1905	2,234,532	180	74	12	115	0
Old Ocean, Brazoria	1934	276,404	4	4	4	800	1
Orange, Orange	1913	32,788,001	434	327	51	735	0
Orchard, Fort Bend	1926	3,144,277	54	27	15	622	2
Picketts Ridge, Wharton	1935	718,807	44	39	35	2,580	1
Pierce Junction, Harris	1921	30,494,622	393	226	71	3,922	2
Pledger, Brazoria	1932	13,108	13	10	12	gas	0
Port Neches, Orange	1929	3,992,823	424	319	18	1,245	0
Raccoon Bend, Austin-Waller	1927	17,274,000	280	194	164	6,364	4
Rockland, Jasper	1928	35,012	24	4	abd.	abd.	0
Sandy Point, Brazoria	1937	0	1	1	1	70	0
Saratoga, Hardin	1901	27,878,286	1,064	872	211	910	1
Seabreeze, Chambers	1936	759	2	2	3	14	2
Segno, Polk	1936	(a)	1	1	2	435	3
Shepherds Mott, Matagorda	1935	1,011	12	1	1	shut in	0
Silsbee, Hardin	1936	3,348	6	6	8	874	3
Sour Lake, Hardin	1902	76,905,169	1,087	1,259	168	1,554	0
South Bay City, Matagorda	1936	42,109	2	2	1	455	1
South Houston, Harris	1935	1,193,437	84	73	75	6,511	3
Spanish Camp, Wharton	1936	gas	1	1	2	gas	1
Spindletop, Jefferson	1901	124,349,565	1,667	1,348	160	2,229	1
Splendora, Montgomery	1934	984	10	1	0	0	0
Spurger, Tyler	1932	gas	6	1	0	0	1
Old Stratton Ridge, Brazoria	1922	19,875	76	3	0	0	0
East Stratton Ridge, Brazoria	1933	10,020	6	1	0	0	0
Sugarland, Fort Bend	1928	24,534,941	79	68	52	5,096	0
Thompson, Fort Bend	1931	21,769,042	233	210	201	14,086	0
Tomball, Harris	1933	5,763,245	335	265	263	8,811	5
Turtle Bay, Chambers	1935	141,152	11	9	9	773	0
Vanderbilt, Jackson	1934	115,064	5	1	1	85	0
Van Vleck, Matagorda	1934	515,343	21	19	19	2,020	2
West Columbia, Brazoria	1917	78,198,160	480	270	34	2,253	1
Withers, Wharton	1936	224,397	20	20	26	1,468	3
Total		1,013,316,905	17,653	13,078	4,685	210,285	135

[1]Based on average of estimated production for week ended March 25.
*Proved salt domes so far unproductive; discovery dates represent years first salt drilled.
a Field opened at close of 1936—no production reported for year.

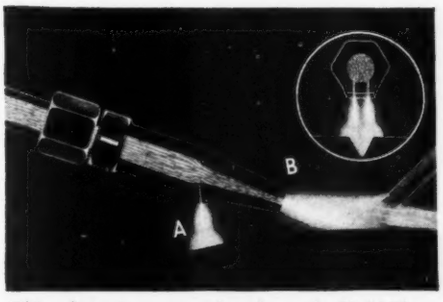
Pipe lines are dependable—
when Multi-Flame Lindewelded



All joints in this 20-inch pipe line are made permanently leakproof by Multi-Flame Lindewelding.

MULTI-Flame Lindewelding confers a new degree of dependability upon pipe-line construction. A properly made Lindeweld is consistently as strong as the pipe itself, even when the tensile strength of the pipe base material is as high as 110,000 pounds per square inch. At the same time, the weld remains tough, ductile and permanently leakproof throughout the life of the pipe.

The Linde organization can help you utilize the many benefits of Lindewelding on your future pipe-line projects. Ask your Linde representative for a copy of "Lindewelding Pipe Lines" or write the Linde office near you for full information. The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and principal cities.



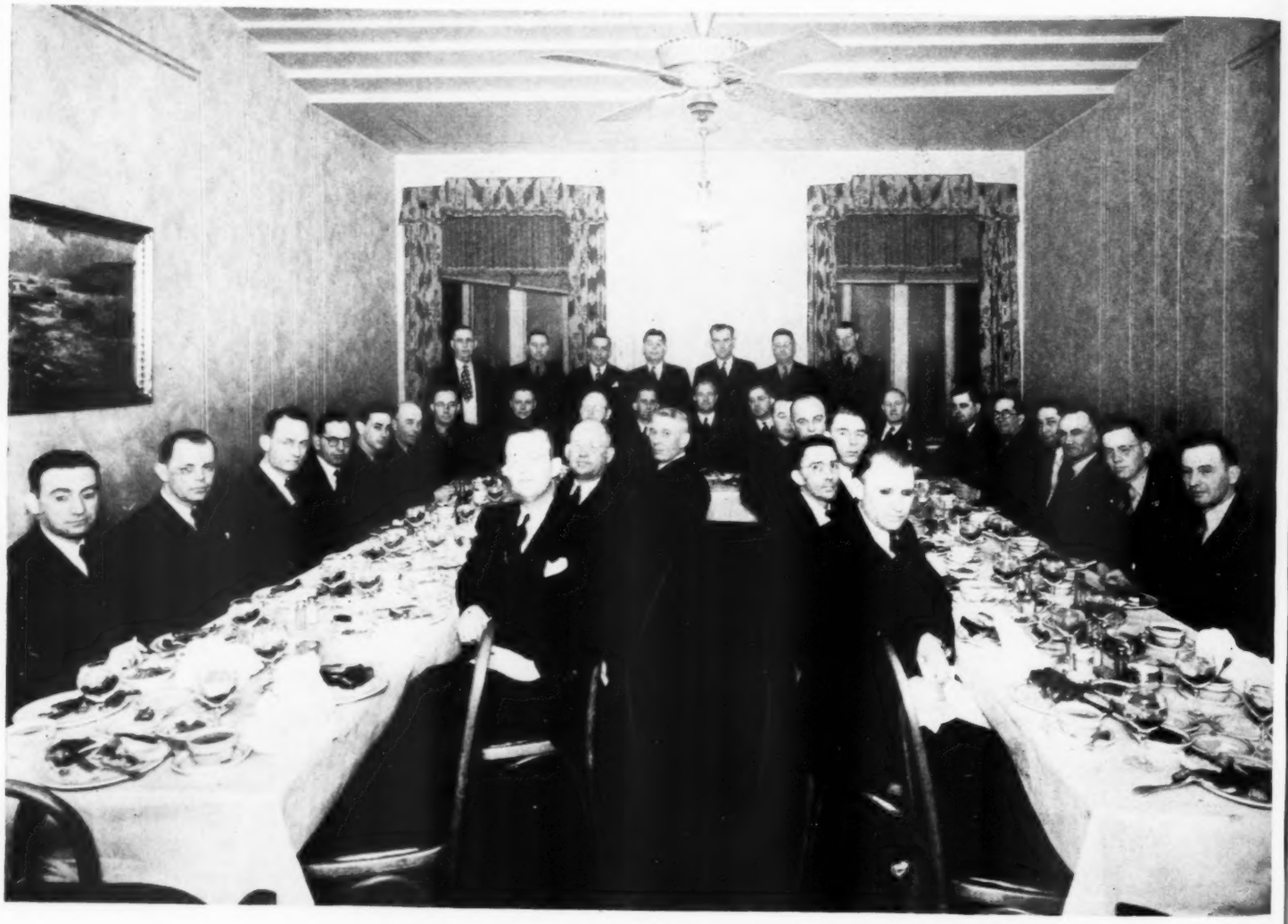
This schematic cross section shows the Multi-Flame Lindewelding Head in action. The small flames, A, preheat the pipe while the main flame, B, melts the welding rod and postheats the weld. In the circle is a cross-sectional view through the preheating flames, A.

Everything for Oxy-Acetylene Welding and Cutting

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES FROM UCC LINDE UNION CARBIDE

"Our Gang"

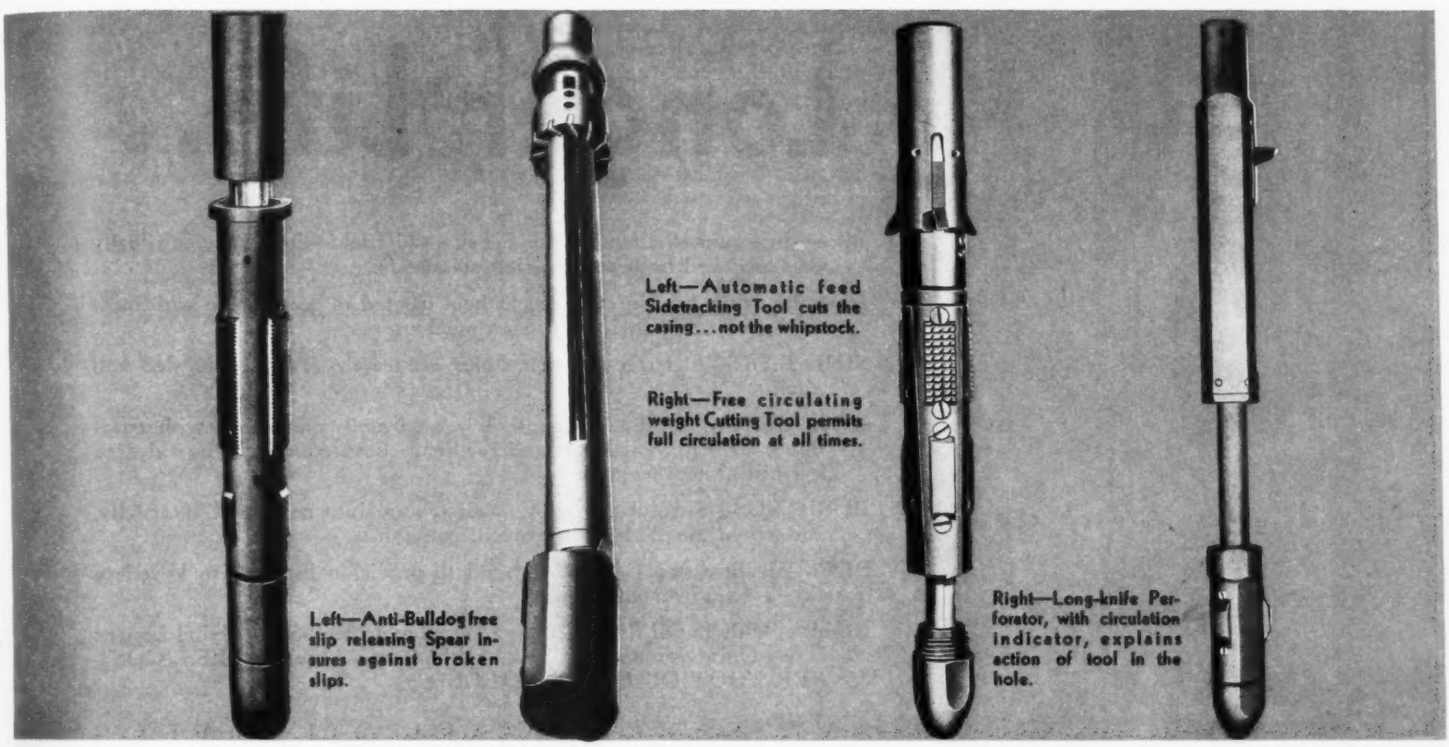
SERVES THE OIL COUNTRY BEST



BECAUSE THEY KNOW THE OIL COUNTRY BEST!

HOUSTON OIL FIELD MATERIAL CO., INC. HOUSTON TEXAS

LARGEST CUTTING & FISHING TOOL SERVICE IN THE WORLD



Left—Anti-Bulldog free slip releasing Spear insures against broken slips.

Left—Automatic feed Sidetracking Tool cuts the casing...not the whipstock.

Right—Free circulating weight Cutting Tool permits full circulation at all times.

Right—Long-knife Perforator, with circulation indicator, explains action of tool in the hole.

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Like a fine gun—Baldwin Super Service Oil Field Chain is scientifically designed and built to precision standards.

It combines the best in alloy steels, heat treated in accordance with most modern practice, with precision machining.

SIDE BARS—of rugged design, holes accurately *broached* to size and pitch.

ROLLERS—of solid bar alloy steel, accurately machined, with maximum strength, toughness and resilience developed to highest degree by skillful heat treatments.

BUSHINGS—of solid bar alloy steel, ground internally and externally, and keyed to side bars to prevent rotation.

PINS—of alloy steel—*forged*, ground to precision limits, also keyed to side bars to prevent rotation.

Result—Baldwin Oil Field Chains 1030 SS and 1240 SS are giving Longer Life—Uninterrupted Drilling, with fewer repairs—LESS COST PER FOOT OF HOLE DRILLED.

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Factories at Springfield and Worcester, Massachusetts

Factory Representative—George J. Fix, Dallas, Texas.
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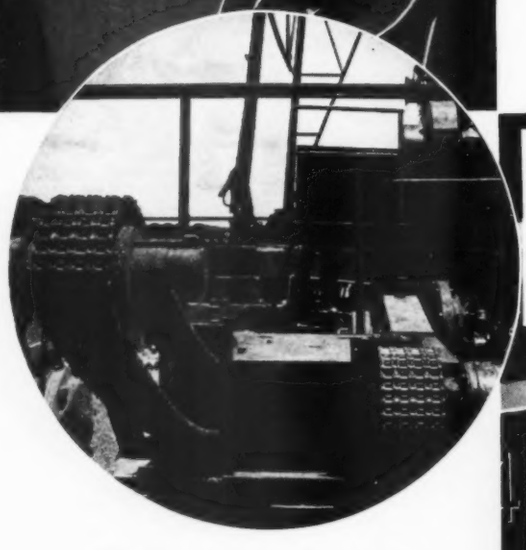
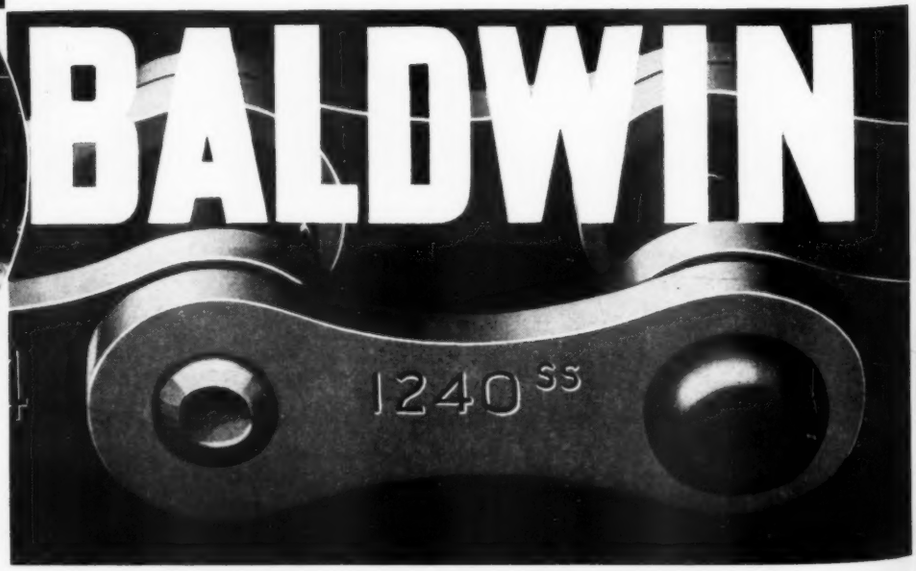
ASK THE DRILLER .. *He Knows*



Typical Baldwin-Duckworth Multiple Strand Roller Chain Installation.



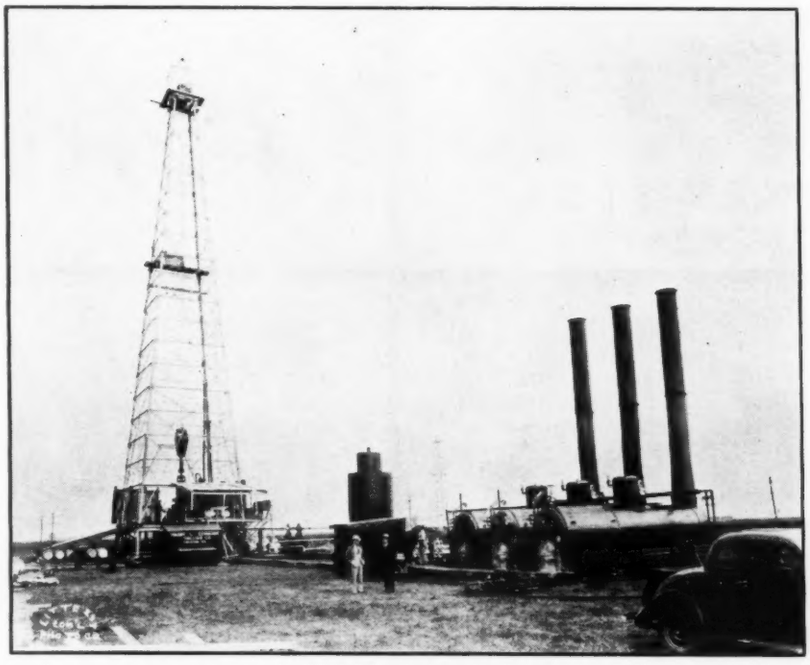
Advancements in Drilling Equipment and Methods

By HARRY L. EDWARDS
President, Edwards Drilling Co.

Provision of more adequate equipment and facilities and adoption of methods which will facilitate drilling to greater depths on the Gulf Coast have been receiving the attention of drilling contractors, oil companies and manufacturers of equipment. Increasing efficiency in drilling practices is being effected and improvements steadily are being made in equipment. Some of the most complete, largest and most modern rigs now are operating on the Gulf Coast.

A few years ago anyone citing a drilling rig capable of drilling to great depths would have in mind a 6-inch rig. Drawworks with 6-inch shafts, traveling and crown blocks with large 6-inch pins; all capable of going to at least 6,500 feet.

The largest rig in existence during the last play at Corsicana was a 6-inch rig brought there direct from the International Petroleum Exposition at Tulsa, 10-inch by 10-inch engine, three 90-horsepower boilers, two 12 by 6¾ by 14-inch pumps, 6-inch shafts in the drawworks, 4-sheave traveling block and tool joint on every joint of drill pipe. Truly a wonderful rotary rig at that time. But with deeper and harder wells coming up next in Oklahoma, the manufacturers with their capable engineers were working and planning night and day to increase the size and efficiency of their drilling equipment.



New "balanced" rig

It soon became apparent that size alone would not do for strength, so the metallurgist came into his own and recommended the use of better steel and alloy with heat treatment, until we now have drilling equipment capable of drilling to 12,000 and 13,000 feet, a depth unheard of a few years ago.

In drilling to these great depths, one cannot be guided by experience alone but must rely on the best of engineers and a little common sense. A mixture of this will go a long way towards solving a drilling problem.

The progress made in drilling equipment has really solved one of the main drawbacks to drilling deep holes. Equipment for one's needs can now be had from most any reliable supply dealer. In choosing a drilling rig, one should make a thorough analysis of the depth to which he wishes to drill or expects to drill in the future, then buy a balanced drilling rig. What is meant by a balanced drilling rig is one not overpowered in some units and underpowered in others. Large boilers with small pumps are often seen, or large drawworks with small traveling and crown blocks.

Many things and practices are necessary for greater depths that are not given much thought in shallower drilling. Greater stress and wear are placed upon equipment, and this should be gone over every day and any weak spots repaired or replaced and not put off until the next tour.

Mud (the one answer to a driller's prayer in a blowout) should be weighed and tested every hour by a competent mud engineer and not by one of the crew. Mud has a tendency to gel or change viscosity very quickly at great depths, resulting in stuck drill pipe. We plot a chart at the end of each well completed, showing drilling speed per day, weight of mud, viscosity, and sand content, and have found this to be a great help while drilling other wells in the same vicinity.

Many Improvements

Many improvements have been made in reducing friction of mud through the mud lines and drill pipe to the bit.

Manufacturers now offer drilling hose with 3½-inch inside diameter and 4-inch inside diameter wash pipe in swivel, and internal flush drill pipe.

Several different types of tool joints are being made to offer the least restriction possible. More thought should be given to get the right size holes in the drilling bit as all the other improvements will go for naught if the holes are too small and not placed so the mud will wash the bit clean. Hard tubes that will not cut away are now being used and a bit properly dressed with the right inserts will cut better and last much longer than bits we formerly used.

Probably more progress has been made in the construction of drawworks than in any other line of equipment. A few years ago a heavy duty unitized drawworks was unheard of. We all thought the day would never come that would see us using a drawworks without a headboard to hold it down. But now we have not only three-shaft, four- and six-speed unitized drawworks with hydromatic brake to help hold the heavy loads, but also have the chains running in a bath of oil. Boilers with no rivets and some with no domes. Engines 14 inches by 14 inches either horizontal or vertical. Any size pumps up to 15½ by 8½ by 20-inch. Diesel electric rigs where water and fuel are an item. Fully enclosed drawworks where sand or dust is bad. It is not necessary to make a rathole connection any more. One company puts out an upside-down elevator that latches on the sub on bottom of kelly. With this elevator there are a pair of short links to which are attached the regular pipe elevators. This outfit hangs suspended from tong board when not in use. When ready to put in a joint of drill pipe, kelly is detached from drilling string. Upside-down elevator is latched on kelly sub and regular elevator latched on joint to be used. This is pulled up and joint screwed in drilling string, then lowered in hole and elevators are hooked on suspending lines and kelly screwed on pipe. This method is much safer and faster than making rathole connection as pipe cannot back off up the derrick.

A wonderful lot of machinery to work with and makes drilling deep wells a pleasure and not much more of an undertaking than that of drilling to 6,000 feet a few years ago.

Valves, fittings, wire lines, derricks and other equipment used in drilling have all kept pace with the demand for deeper holes. If drilling machinery makes as much progress in the next ten years as it has in the past ten, we can look for wells to be drilled on the Gulf Coast from 15,000 to 18,000 feet, uncovering hitherto unknown oil and gas sands and alleviate the fears of those who think we are about to deplete our sources for oil.

Mar-Tex Oil Co. of Houston has purchased three leases in the Bryson pool, Jack County, from Bennett Petroleum Co. for $1,000,000.

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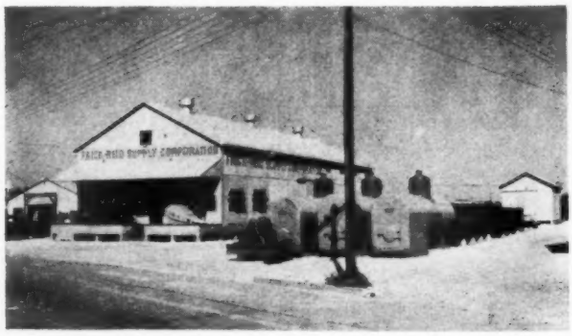
Ralph Keeran, Representative

BEEVILLE, TEXAS
R. T. Ragsdale, Representative



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Producing High-Pressure Distillate Wells

By FRED LOVE
Nowery J. Smith Supply Co.

With deeper drilling a new type of production is being brought into the picture on the Gulf Coast. This is the high-pressure, distillate content gas, characteristic of a number of more recently opened fields. Wells and fields making such production are being encountered with increasing frequency.

Producing of high-pressure distillate wells presents several problems and hazards. Sand cutting resulting from bringing wells in too fast, and the freezing action occasioned by reduction of pressures are among the most serious hazards. At the same time, upon the effectiveness of control of such wells depends the ability of an operator to obtain fluid recovery or get just dry gas.

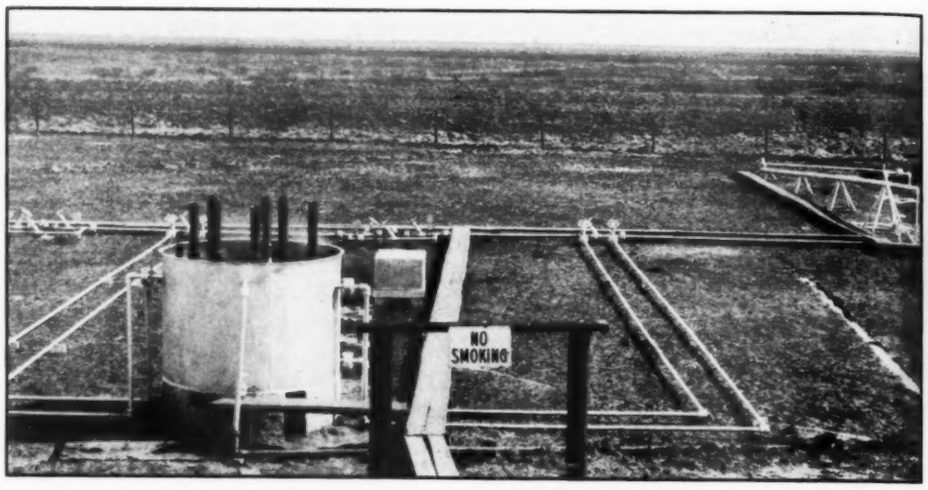
As greater producing depths are reached, higher well pressures are being encountered. Normal pressures up to 4,000 pounds have been experienced in some distillate wells. Also, the existence of extreme abnormal pressures lately has been impressed on operators through completion by Stanolind Oil & Gas Co. of a wildcat distillate well at Greens Bayou, northeast of Houston, with a recorded pressure of more than 4,800 pounds from a depth of 8,100 feet.

With greater pressures, which can be expected with still deeper drilling, the problems and hazards of producing distillate wells are being increased.

While there still is much to be learned about producing high-pressure distillate wells, several operators have made considerable progress in overcoming the problems and reducing the hazards, and have been successful in getting a fair amount of distillate recovery without too much trouble.

Experienced Gulf Coast operators know that sand cutting can be minimized if wells are not brought in too fast, providing, of course, the correct mesh screen is set in the hole and the cement job is properly done. Stanolind has had considerable trouble with sand cutting in its high-pressure Candelari well at Greens Bayou, but no screen is in the hole. The well blew in while being cored, and as operators were unable to kill it due to the excessively high pressures, it was completed as it was without screen, and with drill pipe in the hole.

In combating the freezing action of a high pressure distillate gas well, very effective pressure reducing systems have been developed by several companies, among them Pan American Production Co., Sun Oil Co. and Stanolind Oil & Gas Co. Pan American Production Co. has had occasion to do some work along this line at Dickinson. Stanolind's most notable experience has been with its high-pressure well at Greens Bayou.



Pressure-reducing system for Sun Oil Co. No. 1 Acom

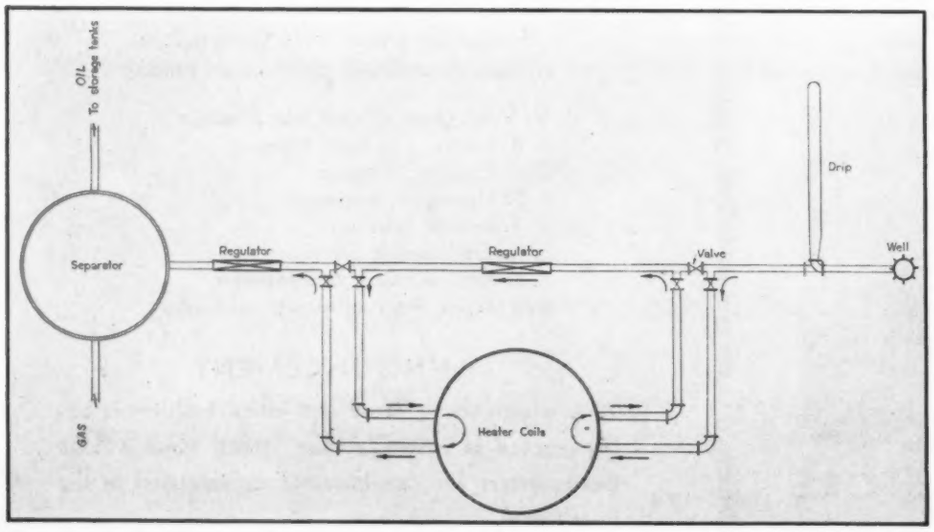
Pressure-reducing systems installed by these companies have been similar in general principles. All provide for one or more pressure reducing regulators, of the same choke type, in the line from the well to the separator. Each makes use of a hot water heater to protect the system from freezing through the last pressure reducing stage. A drip also is included in each of these systems for accumulation of any condensate in the production before reaching the separator.

The drip generally is a joint of 6-inch casing, sealed at both ends, and tilted upward at the gas inlet end. The top end is supported by legs built of pipe and welded. Each is of simple design and operation.

Hot water heaters have been used in the majority of these installations. Such heaters have been considered preferable to steam or fire because they give a more constant heat and have been found less expensive to operate, and involve less trouble. The water is heated by gas burners under the water reservoir.

Among the most complete and efficient systems so far provided are those put in by Sun Oil Co. at Labelle, Jefferson county, and at Seabreeze, Chambers county. At Labelle one well has been completed, while at Seabreeze there are three wells, each with a separate pressure-reducing and distillate-recovery system. Producing conditions are similar at all these wells and the hook-ups are identical.

Two stage pressure reduction is provided. As operated, the high pressure gas from the well passes first through the drip, and then through a coil in hot water heater to the first reducing regulator. Up to this stage the well pressure is maintained on the system. Due to heating of the gas a sharp drop in pressure is possible without freezing. With pressure greatly reduced through the regulator, the gas is cycled in another coil through



Flow chart of pressure-reducing system for Sun Oil Co. No. 1 Acom, high-pressure distillate well at Seabreeze, Texas Gulf Coast

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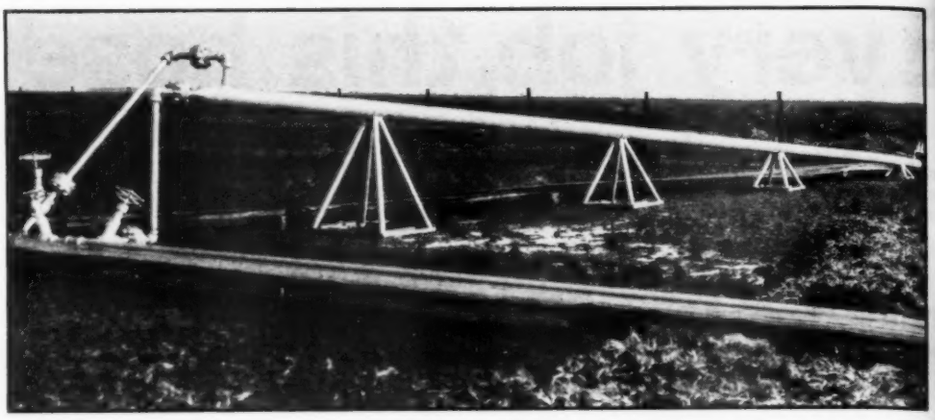
the hot water heater again for reheating before going to the second and last reducing regulator. With pressure again reduced through this regulator, the gas is passed to the separator.

The amount of pressure reduction at each of the reducing regulators is adjusted to permit the most efficient operation of the system, which varies according to individual wells. Working pressure of the Acom well is between 3,100 and 3,500 pounds, which pressure is maintained to the first reducing regulator. This regulator in its present operation is set to hold approximately 2,000 pounds pressure from there to the next and last regulator. The latter is set to hold around 800 pounds to the separator, which at present is being operated around 200 pounds.

Establishment of the correct pressure drop between the last reducing regulator and the separator possibly is the most important phase of the operation because it is the efficiency of this stage in the system that controls the recovery of fluid. Up to the last regulator the gas has been heated to eliminate freezing. There the gas must be cooled and expanded again to cause it to liquefy. To do this the pressure on the separator must be carried sufficiently below that of the last regulator to get the necessary cooling effect and at the same time the drop in pressure must not be so great as to cause freezing.



Drip hook-up Sun Oil Co. No. 1 Acom, high-pressure distillate well

Regulation of the proper pressure drop is made by raising or lowering the pressure on the separator or on the last regulator until the correct and most efficient operation is obtained. It has been found that sometimes considerable adjustment and time are required to determine the most efficient operating pressures, so that the greatest fluid recovery can be obtained without freezing. The reducing regulators are of the choke type which permit reducing the pressures without relief or escape of gas.

The efficiency of the system on the Acom well as now operated is indicated in a potential test in which 72 bbls. of distillate was recovered from a gas production of 2,470,000 feet of gas in 20 hours through one-quarter inch choke on the well tubing. However, this choke is not an important factor in view of the additional chokes in the reducing regulators. This recovery is significant in that the production was pinched down from an open flow potential estimated at 107,000,000 feet of gas daily. Due to absence of market outlet, production both at Seabreeze and at Labelle is being restricted to field fuel requirements. At present about 600,000 feet of gas is being taken from the Acom well daily from which about 12 bbls. of distillate is being recovered.

In each of the hook-ups described by-passes are provided for the drip, as well as for each of the reducing regulators, and for the heater. It is possible, by control of valves, to direct the well production direct to the separator, if desired, or through either of the regulators, with or without going through the heater. This provides a flexible operation of the system and permits making repairs or replacements in any part of the system without shutting the well in. Due to the high pressure, the lines are constructed of hydraulic pipe, and all material is of high test material.

Heaters are of simple construction. In the newer installations these are of a standard type, consisting of a cylindrical tank for the water set up on a fire box. The water is heated by flame with gas burners set in the fire box under the reservoir. Flues passing up through the water permit more uniform distribution of heat. The gas is heated in passing through coils set in the tank. In normal operation a water temperature of around 145 degrees is adequate. As plenty of gas is available, the cost of heating the water is negligible.

Steam jackets were used originally on the lines of Stanolind Oil & Gas Co.'s high-pressure Candel-

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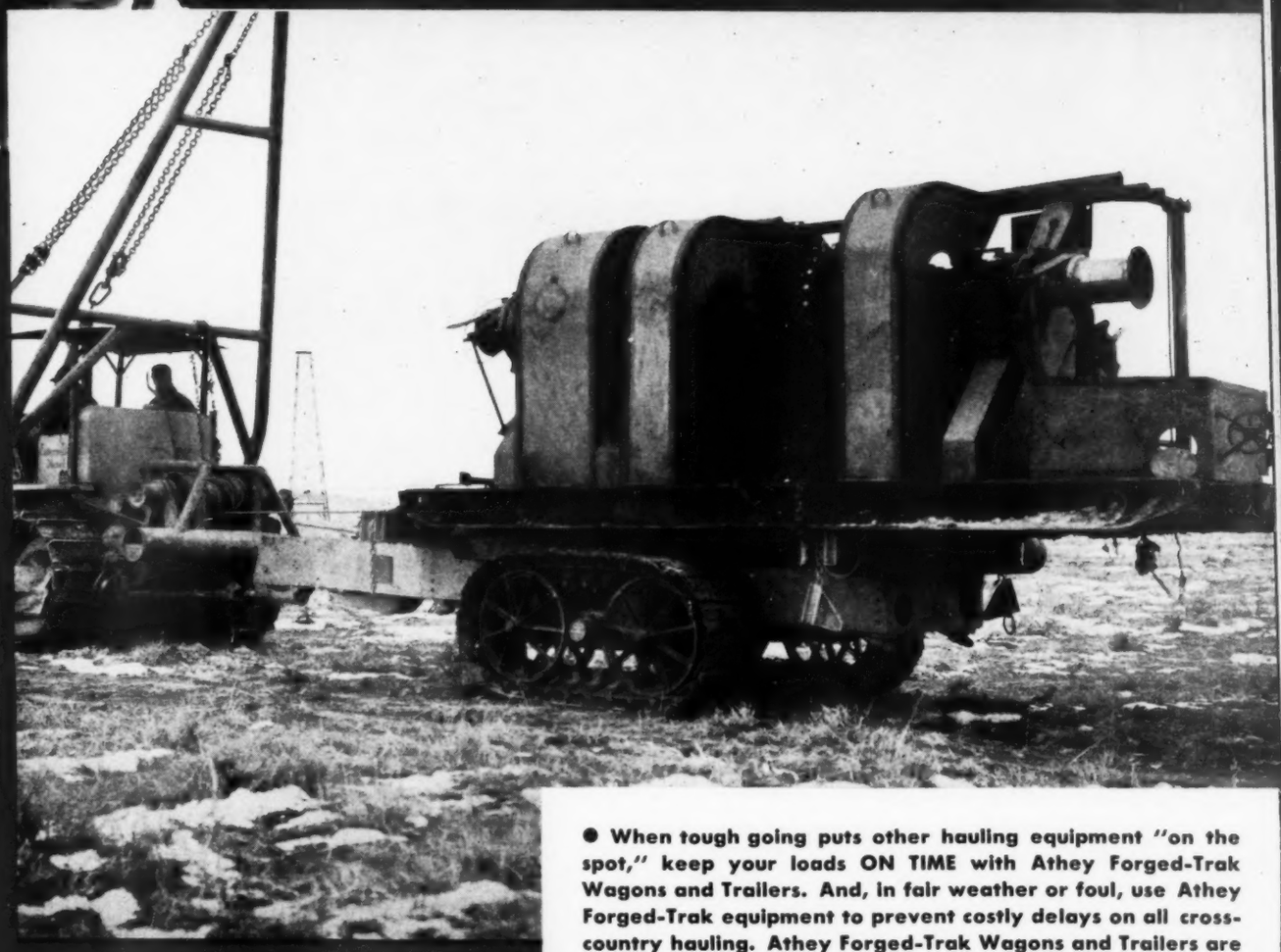

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ari well at Greens Bayou. These now have been replaced by a hot water heater. The completion of this well with 5,000 pounds pressure was described in the November 5, 1936, issue of The Oil and Gas Journal. To reduce the pressure of the well gradually, a succession of three chokes was placed in the line. The first was placed approximately 80 feet out from the 10,000 pound test gate valve, the next 60 feet further out, and the third 60 feet further out. The 2-inch hydraulic line in which the chokes were set was enclosed in a 4-inch pipe, sealed at the gate end but open at the outer end. Live steam injected in this shell prevented freezing during the pressure reduction stages. With the installation of the hot water heater, pressure reducing regulators have been installed to replace the above chokes.

In completion of Harrison & Abercrombie No. 3 Bernard, the Gulf Coast deepest producer, which has a pressure of 4,100 pounds, steam heaters are used on the lines from the well to the separator. These have proved satisfactory and efficient in preventing freezing.

Sweden County

The deepest production in Duval County, Southwest Texas, was recently brought in by Hiawatha Oil Co. for what is termed by many South Texas operators a major discovery for the area. The fields of the Laredo district, embracing Zapata, Webb, Duval and neighboring counties, have followed the trend of an ancient shoreline, finding production in relatively shallow sands ranging generally from 2,000 to 3,000 feet. The new Sweden field, recently discovered, in southeastern Duval County, is believed by some to indicate the presence of another deeper trend which may parallel the shallower field on the south and east. Geologists' opinions differ on the subject, however, some believing the Sweden field results from the presence of a deep-seated salt dome.

The new field, discovered late in January, has attracted considerable attention in the South Texas industry. The discovery well, No. 1 Southland Life Insurance Co. is producing from sand at 5,845-67 feet. After perforating the casing set at total depth of 5,867 feet, the well was completed for 108 bbls. per day of 42.4 pipe line oil. The new field is approximately 6 miles south-southwest of the city of Benavides, and about 3 miles due south of Sweden, for which the field was named.

Immediately following the discovery, Hiawatha Oil Co. moved in an additional rig and began drilling two offset tests on the south and east. No. 1 Miller was completed late in March for an initial production of 135 bbls. per day on a one-eighth inch choke with pressures of 645 pounds on the tubing and 1,080 pounds on the casing, slightly lower than those recorded on the discovery well. The other test, Hiawatha No. 1 Herberger, however, has experienced difficulty in completing. After drilling plugs in casing set at 5,862 feet it swabbed salt water with some oil and is being plugged back to retest.

The Sweden field is producing in the Cockfield horizon. The discovery well cored the tops of the following formations: Jackson at 4,342 feet, Hockley at 4,650 feet, and Cockfield at 5,704 feet.

Segno-Silsbee Fields

Development of the Segno and Silsbee fields in Polk and Hardin counties, Texas, recent discoveries along the Conroe Trend, has indicated large potentialities.

Segno is in the southern corner of Polk County in the "Big Thicket" area centering around section 15, I.&G.N. Survey, and was opened in December, 1936, by completion of J. K. Dorrance and others No. 1 Sarah Wing which flowed 40 gravity oil from the Upper Cockfield sand bottomed at 5,194 feet.

While the field is in its early stages of development, completion of one additional well and showing in an important outpost, 1,600 feet east of production, has indicated a uniform sand condition which is expected to cover a wide area. The most attractive feature about this new strike is that the lower section of the Cockfield which has been more prolific, has not been tested to date.

With the exception of a few small pieces, the field is controlled by Gulf Oil Corp., Humble Oil & Refining Co., and Kirby Petroleum Co. These companies, together with J. K. Dorrance, have three rigs running and location has been made for another test by Rajo Oil Corp. The field is being developed on a 10-acre spacing program.

The Silsbee field, a few miles north of the town of Silsbee in Hardin County, was opened the latter part of 1936 by the blowout of Republic Production Co. and Houston Oil Co. No. 1 G. W. Brooks in the G. W. Brooks Survey. The blowout occurred while a drill stem test was being made in the Upper Cockfield sand at approximately 6,900 feet. The well burned for several weeks and was finally killed by the company's No. 2 Brooks, a relief well, later completed for an initial production of 425 bbls. of 38 gravity oil per day.

The field centers in the G. W. Brooks Survey and is being developed jointly by Republic Production Co. and Houston Oil Co. who have approximately 40,000 acres. The company is keeping three rigs running while Humble Oil & Refining Co. has planned to drill its lease adjoining.

Production is obtained from the upper and lower sections of the Cockfield sand and to date eight wells have been completed extending production to south, northeast and east. Daily average production for the week ending March 20 was 874 bbls.

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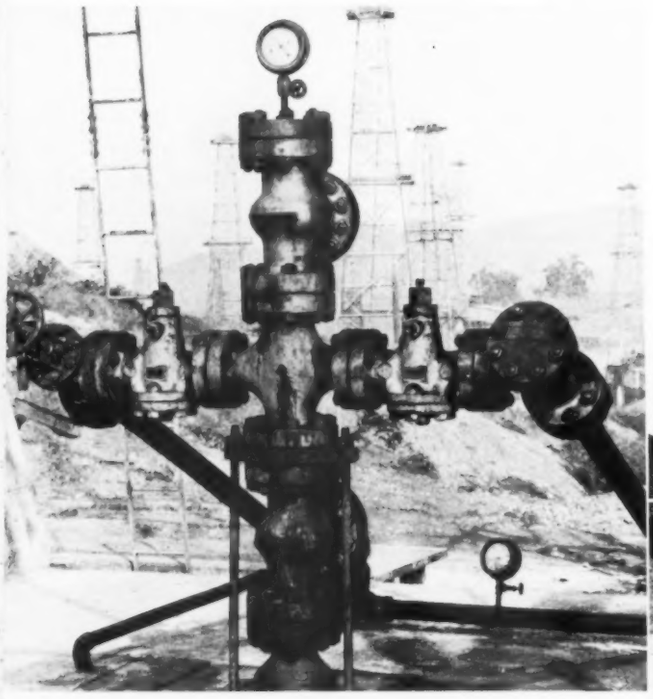

Above view shows Nordstrom Hypreseal Valves on Xmas tree at Baldwin Hills, Calif. Center view shows Nordstroms on gas lift lines at Kettleman Hills. The lower photo shows 130 Nordstroms, 2", on a tank manifold at Baldwin Hills.

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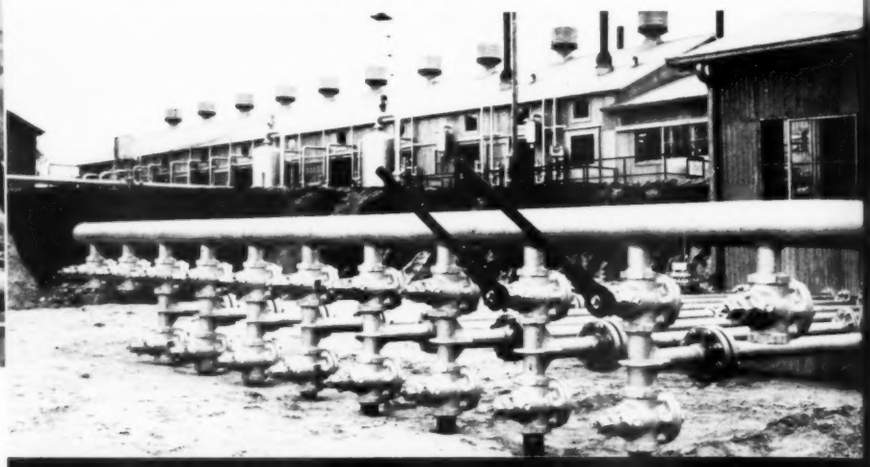

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Electrical Coring Practices on the Gulf Coast

By L. W. STORM
Schlumberger Well Surveying Corp.

Schlumberger electrical surveys have two main uses both of which apply especially in the Gulf Coast region. They are: (1) To provide a log of the formations, and (2) to distinguish the fluids in them. It will not be necessary to describe the general theory and practice for these surveys since that has been done several times, quite thoroughly.*

As to the first of these uses, that of logs on the Gulf Coast: The stratigraphy there is a monotonous repetition of similar sands and shales that have resulted from the deposition, reworking and redeposition of materials from the same source during most of Tertiary time. Lithologically they differ so little that driller's logs are practically useless for geological correlation. Even the logs made after laboratory examination of drill cuttings and cores are far from satisfactory, except for several excellent paleontological markers. These serve very well, for parts of the section but leave wide intervals undifferentiated. There is, for example, no reliable marker of this sort above the top of the Discorbis zone which for the inland part of the belt means from 3,000 or 4,000 feet below the surface, increasing to 7,000 or 8,000 feet near the coast.

The situation with regard to electrical logging is entirely different. All these recurring changes from clean sand to pure shale through every variation of sandy shale and shaley sand, are revealed by corresponding peaks and depressions in the porosity and resistivity logs.

Each group of sands is represented on the logs by a characteristic pattern, which varies from place to place with the changes in the sands themselves. On a large scale certain of these patterns can be recognized over wide areas and used for long distance correlations. In a more detailed way, for instance, within the limits of an oil field, usually dozens of such patterns can be recognized, each with several persistent minor details. No such complete logs with scores of good points for correlation have been available before anywhere; much less in the Gulf Coast area. Their possibilities in exact analysis and solution of structural and stratigraphic problems are only beginning to be appreciated.

As to the second use, the distinction of fluids in a formation: Here again Gulf Coast conditions are favorable. In the clean quartz sands of the eastern part of the district, Louisiana for example, below a depth of 3,500 feet a comparison of the porosity and resistivity logs, either by themselves or in combination with core information or other data, will distinguish an oil or gas sand from a salt water sand in probably 95 per cent of the cases.

Going west and southwest, deeper sands—Frio—containing volcanic ash become more and more important and all the sands contain increasingly more lime. Conditions as far west as the Colorado River are still generally favorable. Southwest of there the ash and lime interfere more and more with the resistivity measurements, introducing irregularities that mask the effects of the oil or salt water. Distinctions are not so certain. Still they improve with knowledge of the formations and with the development of electrical logging technique. Thermometric surveys and the side wall coring device also come into service here. The value of the log on account of its completeness and for correlations remains unimpaired.

Importance of a Complete Log

Ever since the inception of rotary drilling an objection to the method, particularly for wildcatting, has been that oil sands are likely to be missed; and that danger persisted, notwithstanding all improvements, until electrical logging did away with it entirely.

The sand in the discovery well in the Sinton field was first shown on a Schlumberger log, and since then such discoveries have been quite common.

The 4,000-foot sand and the 4,400-foot sand at

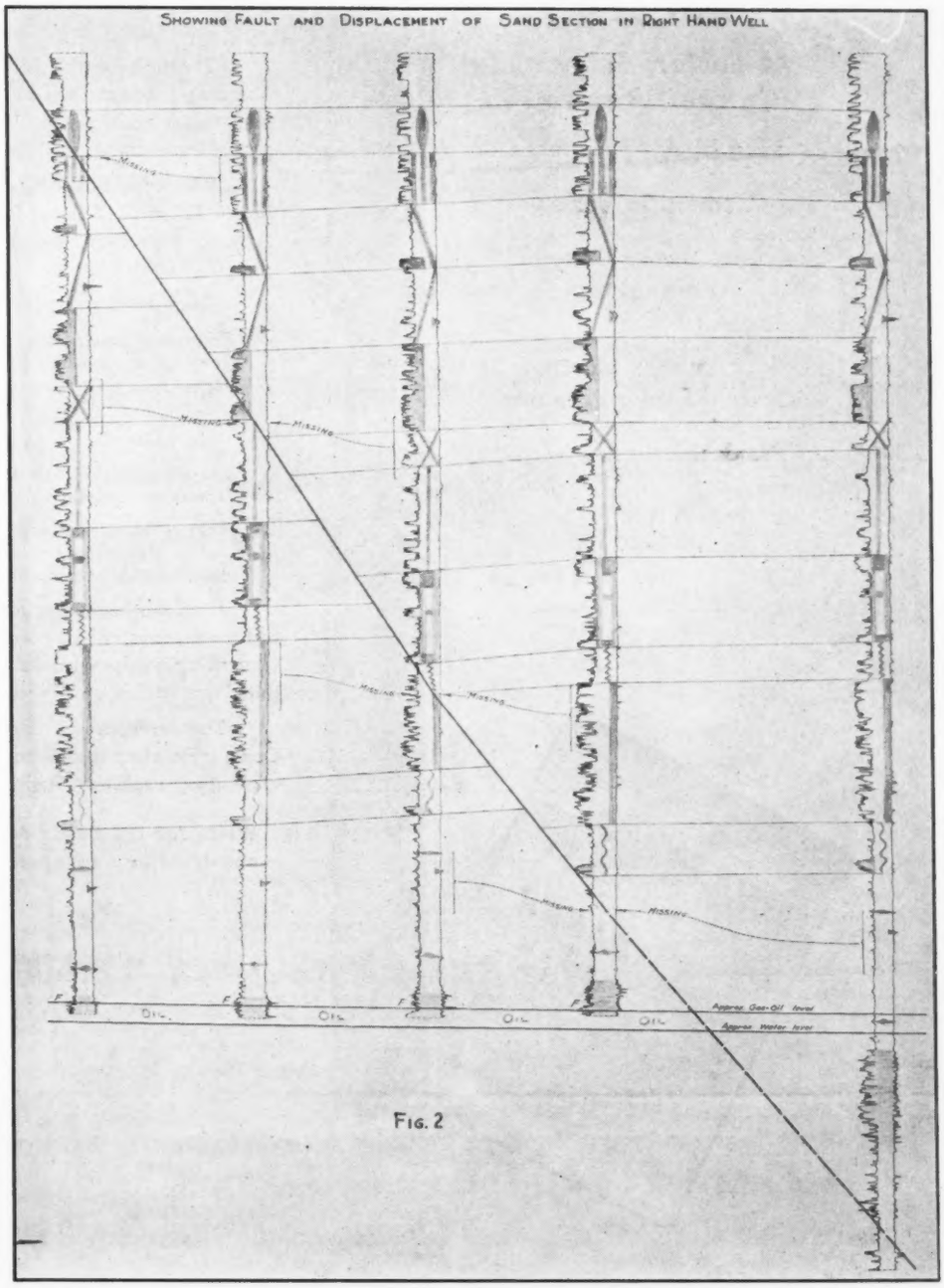

Fig. 2

Cross-section of Gulf Coast field

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Throughout the history of industrial development, one outstanding principle has been repeatedly demonstrated—that when a serious obstacle stands in the path of progress, man soon finds a way to overcome that obstacle.

When the Baker Model F Cement Retainer was first introduced in the Texas Gulf Coast last year, history was running true to form. A serious problem — oil well cementing — was hampering the progress of drilling and production methods.

The industry needed a tool that would:

- ✓ provide a sure means of placing cement through tubing or drill pipe at any point where it would be effective, whether it was around the shoe or at some predetermined point behind the casing or liner;
- ✓ eliminate the danger resulting from sticking or plugged tubing or drill pipe when the "tubing method" of cementing was employed;
- ✓ be adaptable to any pressures and would be particularly suitable for cementing when circulation was difficult or impossible to obtain;
- ✓ that could also be used as a Bridge Plug in casing or liner and when set as such at any point, would pack off securely, to prevent the movement of fluid or gas either up or down the hole.

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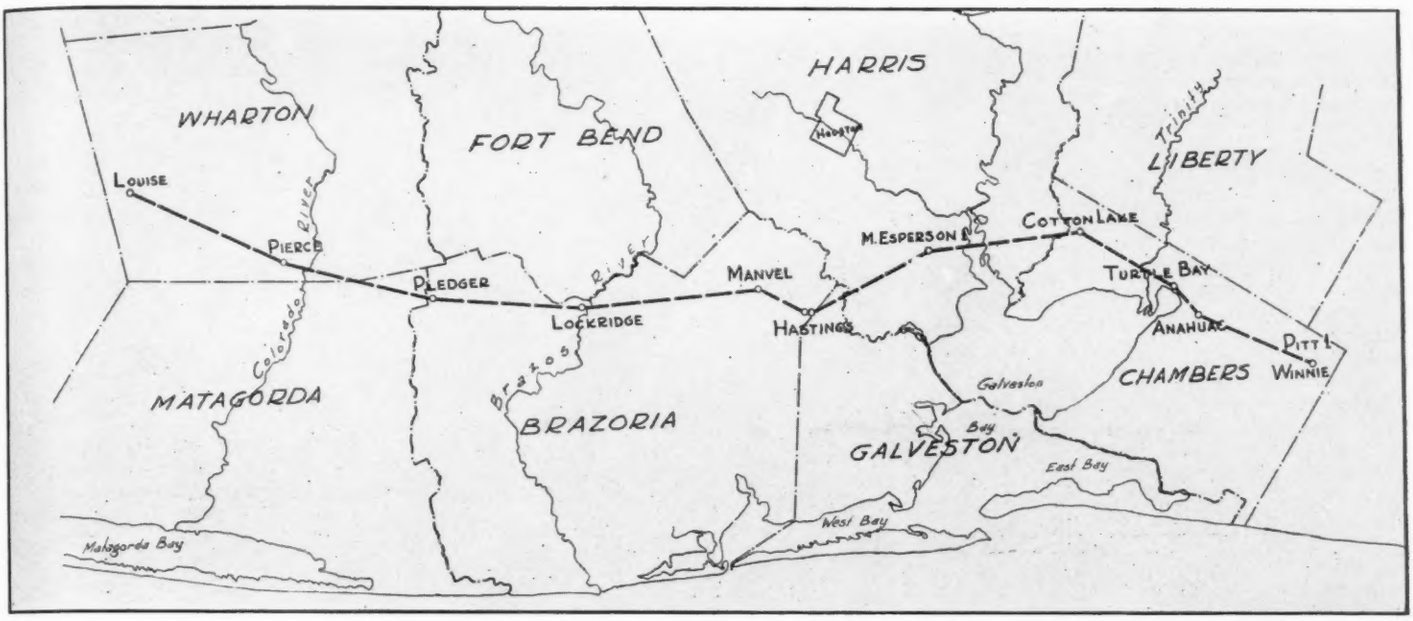
Clarkwood are examples, also the 6,500-foot sand in the Buckingham McCampbell well in Aransas County. There have been a number of such discoveries in the Greta and Tomoconnor districts.

A Schlumberger survey, in addition to its other uses, is regarded here as insurance that nothing has been missed. For this reason, bottom-hole contacts on wildcat wells usually specify that such a survey be made. Figure 1 is an arrangement of composite or type logs of several localities showing some of the more persistent sand groups and the changes of sedimentation, going from west to east



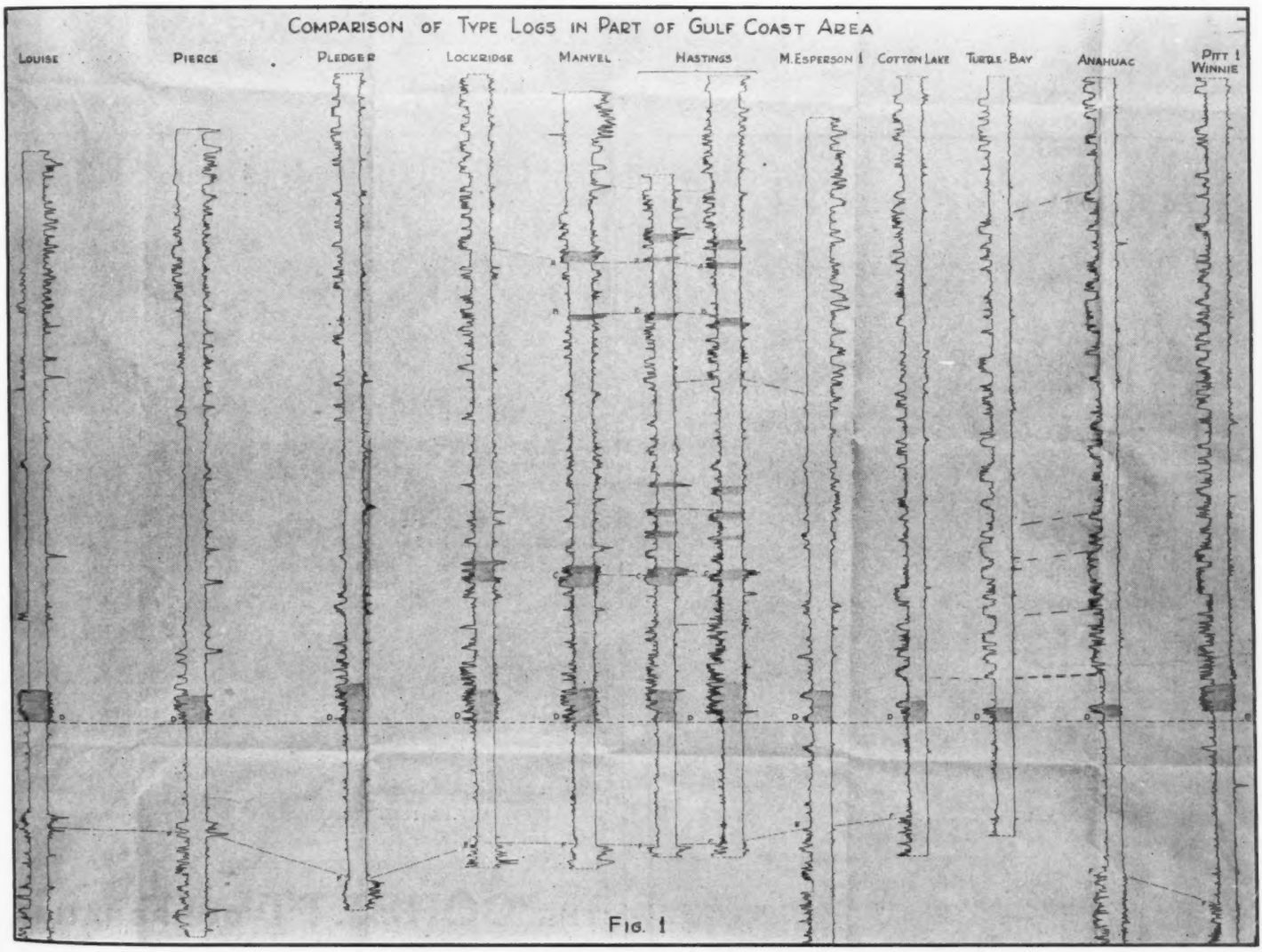


FIG. 1

Faults present but unrecognized in some of the wells may interfere with correlation

in part of the Gulf Coast region. The marker "D" just above the top of Discorbis is the base of a very persistent sand series. It can generally be recognized all over the Gulf Coast area. "F" which corresponds closely with top of Frio is also quite persistent.

Above "D," that is, above top of the Marine Oligocene (Miocene according to some authorities) logs show a great variation in the section, and there is no single marker that can be followed through the district. Over shorter distances resemblances are apparent. Note the similarity between the composite log at Hastings and that at Manvel for example. "A," "B" and "C" are recognizable as points of correlation as well as "D" and "F." Then closing the distance still further, note the numerous points of correlation between the two logs from the Hastings field. There will be as many in any other area of the same size.

By stepping from well to well across short distances, the correlations can be carried across wide areas and all the changes can be noted as well. This mode of study, in a direction across the strike of the beds, is most useful in finding where sands lens out up dip or lose their porosity, thus providing a locus favorable to the accumulation of oil.

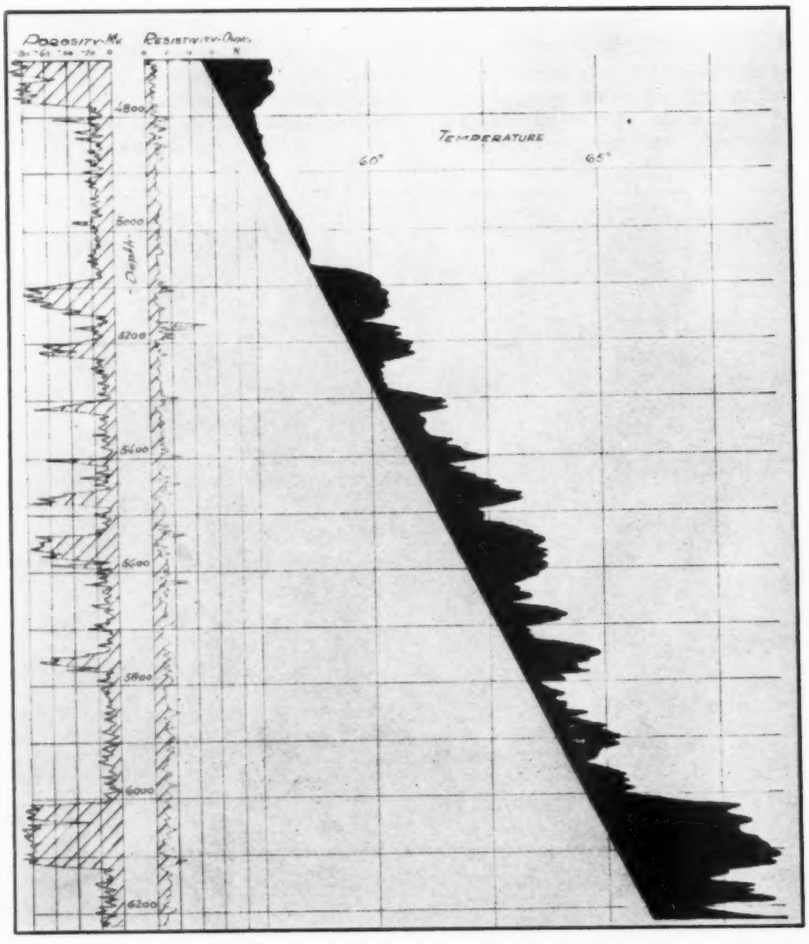


Fig. 3—Logging formations, Texas Gulf Coast

As to the study of small areas: The structure of every Gulf Coast field developed since electrical logs became available, has been worked out by their means.

Most of the better known domes of great uplift—piercement type—were developed some time ago, but the few developed lately with the advantage of an electrical log of every well are understood with a thoroughness that was impossible for the old ones. The segments into which they are cut by radial faults are mapped exactly. The displacements of these faults are known. The dip of the beds at all horizons is known; sands that were thought to be erratic and lenticular have been named and numbered and reduced to system. The advantage thus obtained in the way of drilling for definite objectives is obvious.

The domes of comparatively slight uplift, where the beds have merely been arched instead of pierced by the salt, and of which so many have been discovered by geophysics lately, have all been studied in detail by the electrical logs. They are all known to be faulted in a similar way, often with two principal faults forming a graben and with many other parallel and intersecting faults:

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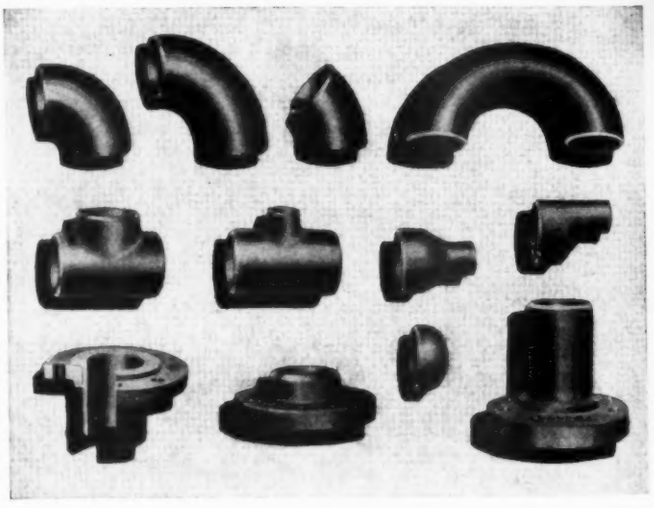

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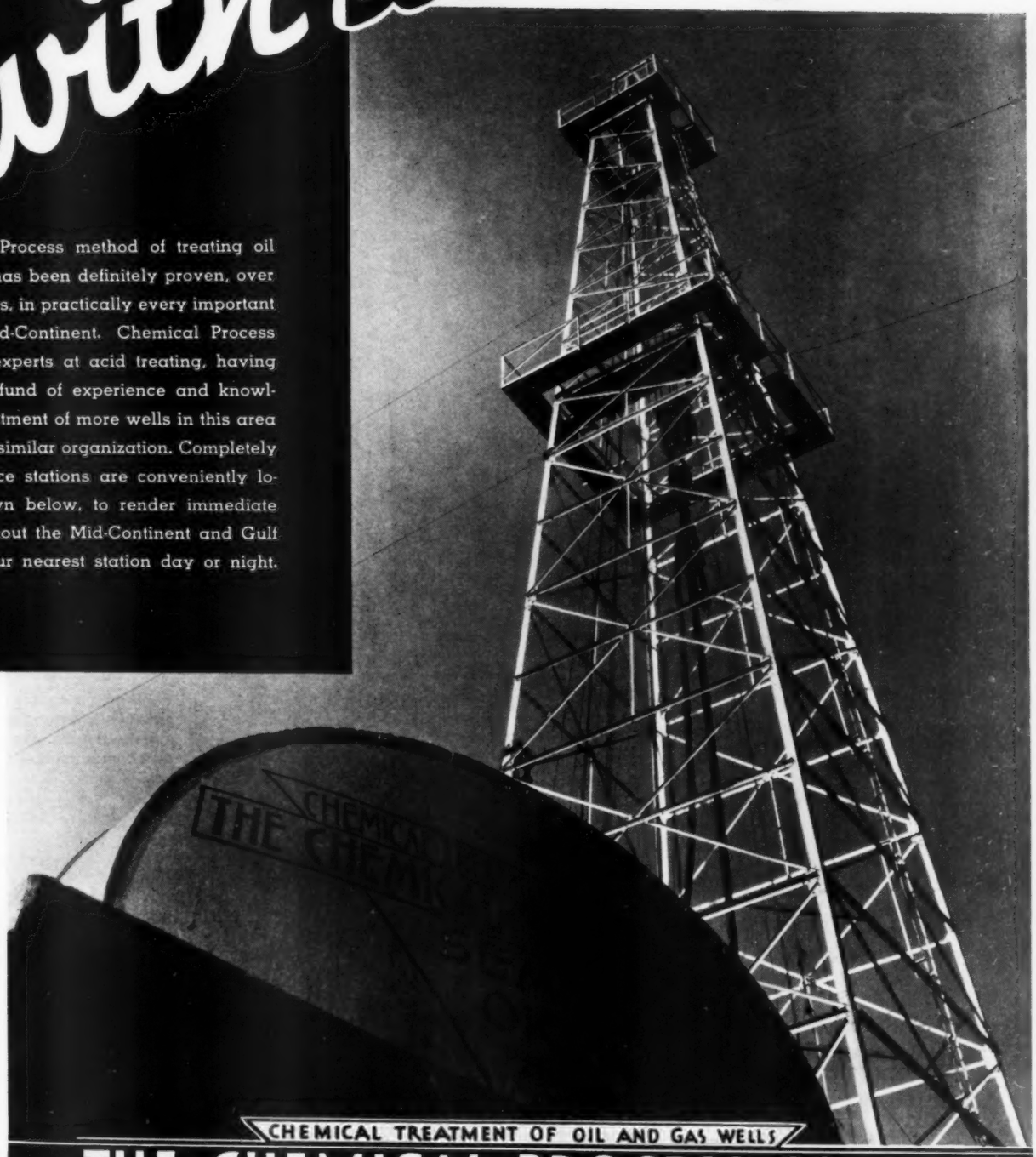

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markers on the electrical logs the positions of the faults are known and mapped. The point at which any well passes through a fault is logged exactly by a section of beds being absent and the amount of throw is indicated by the thickness of the missing section. Since the oil generally occurs at a definite horizon between a known gas-oil level and a known water level and since the sands are shifted by the faulting to positions in or out of this interval between the two levels, it becomes a problem in descriptive geometry to locate a well so it will be on the right side of a fault to find a given sand at the right level, to keep out of barren areas and so forth.

At Tomball, 100 miles inland, producing from the Cockfield and fortunate in having unusually good paleontological and lithological markers, a difficult well spacing problem was worked out very nicely by this means just before electrical logging became common; but in such fields as Hastings, Manvel, Anahuac and others further down dip with paleontological markers none too good, and these only at considerable depth, the solution would have been very sketchy without the electrical logs.

Goose Creek may be an example. It was drilled in early days—reckoning by oil field history on the Gulf Coast—and on the strength of drillers' logs with some paleontology, its sand system has been described as irregular and lenticular. Barren spots were found unaccountably. Offset wells found the sands at different depths. There is known to be a sag on the dome which in the light of present knowledge looks suspiciously like a graben. Possibly our knowledge of Goose Creek is like a picture very badly out of focus, in which only the main features appear, and these obscurely. Electric logs, by bringing out the details sharply, would very likely have revealed a pattern of faulting on this dome similar to that of its neighbors, and at the same time would have saved many a dry hole.

Figure 2 shows a fault as revealed by a series of wells. The well shown on the right was dry because the producing sand series had been faulted below the water level.

Further to the southwest outside the main area of the salt domes, different problems appear; faulting again combined with rapid variation of the sands. The electrical logs reveal the conditions again, but no details are available for publication. When one considers the possibilities of tracing the changes in the sands and of locating their updip limits or the limits of their porosity—so important in its bearing on oil accumulation—it is surprising electrical logs are not used in this area to an even greater extent than they are.

Passing on to uses, on the Gulf Coast, other than for logging of formations, these may best be described along with the uses of temperature surveys and of other recent additions to Schlumberger equipment. Such uses are: To distinguish oil and gas sands from salt water sands; to locate flows of gas or of water; to log sands and other formations behind casing; miscellaneous uses.

The fact that in the Gulf Coast region oil or gas sands can generally be distinguished electrically from salt water sands—with less certainty in the Southwest—has already been stated. Oil or gas is highly resistant to the flow of electric current. Salt water is not. The porosity curve locates the sand. The resistivity curve shows whether it contains oil (or gas), or water. This is the principle in outline. The actual distinction is complicated by the following facts:

1. That in many oil sands (some authorities say in all oil sands) there is from 5 to 40 per cent of salt water, connate or interstitial so-called. The sand may produce pipe line oil, but the water is there, held by adsorption in the finer spaces of the sand and cutting down the resistivity. Fine-grained sands, having a higher percentage of fine porous space, generally contain most water. Therefore a fine-grained sand may make an oil well, but still

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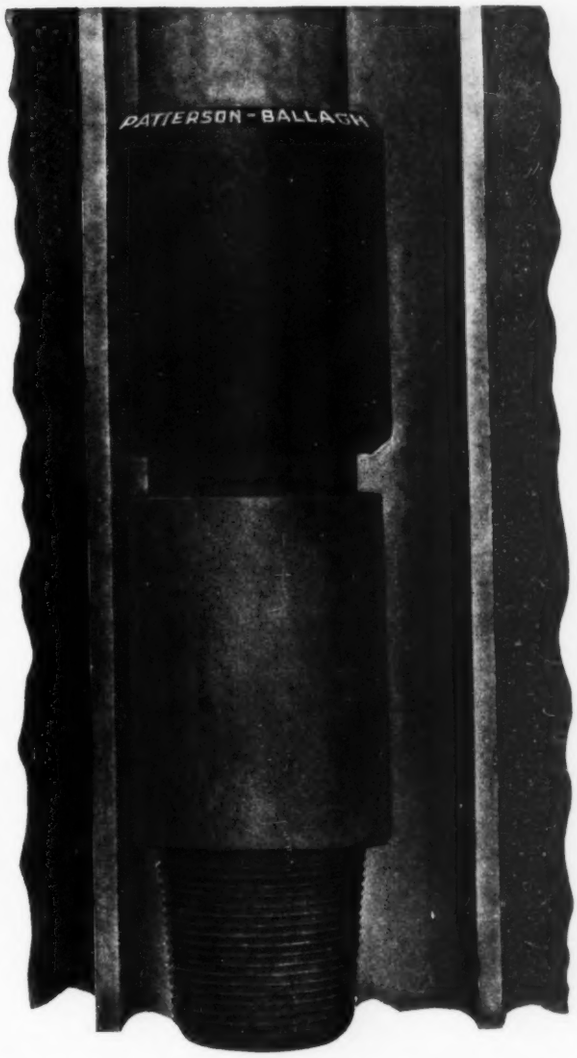

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show a rather low resistivity. Also, the closer to water level—the level at which the well produces water—the more interstitial water† and thus the more the resistivity. Shale also contains much adsorbed water and, therefore, mixed with sand, it lowers the resistivity. So does volcanic ash, which is partly in the form of Bentonite or clay.

2. Lime, even in a porous sand, tends often to increase the resistivity. The reason for this is not known.

3. High temperature decreases resistivity of an electrolyte—such as salt water. This increases the effect of the connate water.

4. Fresh water is fairly resistive; resistivity decreasing as salinity increases.

The effects of these interferences can be taken into consideration, and in the eastern part of this district, they do not prevent the distinction of oil from water. In the southwestern part sometimes they do.

Flows of gas or water into a well may be located generally by the temperature method†.

After some conditioning of the mud an electrical thermometer, recording at the surface, is lowered into the well, and a continuous curve or gradient is obtained. Cool spots indicate gas that by its expansion has cooled the formation. Warm spots indicate water.

In the Gulf Coast region surveys to locate gas are not made frequently although it would seem that there should be frequent occasion for them.

Temperature surveys, on the other hand, to locate water in Gulf Coast wells are made quite frequently and are generally successful.

Recently a new device for locating water has been introduced. It measures the transparency of mud or other fluid in a well. The apparatus contains an electric light and a selenium photo-electric cell, with a gap between through which drilling mud or other fluid circulates. The assembly is lowered into the well, and when it reaches a spot where water is entering, the greater transparency, due to dilution of the well fluid at that place, is recorded on the surface by the change in an electric current passing through the cell.

Logging Behind Casing

Logging formations behind the casing by means of the electrical survey is so far in the experimental stage. This can be done, however, sometimes surprisingly well, by the temperature method, and for this, Gulf Coast conditions are as favorable as any.

If the mud in a well is circulated to an even temperature and then allowed to stand, its temperature slowly adjusts to that of the surrounding formations, but not at a uniform rate. Sands, and especially water sands, transmit heat more rapidly than shales do; and therefore the gradient, measured in the mud, will show irregularities that build up to a maximum and then fade out as the gradient in the mud conforms more and more to the smooth one in the formations.

Figure 3 shows how clearly formations may be logged in this way through casing. The electrical log made previously in the open hole is shown for comparison.

This method has been used successfully to locate a sand that was missed in the drilling and cased off, but which subsequently made a producer in a nearby well.

Miscellaneous

(a) Location of cement behind casing by temperature survey (due to the heat of setting) is as accurate in the Gulf Coast region as it is anywhere, except perhaps in very deep wells where the high temperature of the formations sometimes masks the heat from the cement. The manner of making this survey is described in the articles cited on temperature surveys.

(b) The diagrams are very useful here in making an analysis of the sand section, checking the thickness, estimating porosity, etc., in connection with calculating reserves†.

(c) For checking depth of casing shoe and to show its position in a sand body, and for locating junk that has been crowded into the wall of a hole, the electrical surveys are as useful here as they are elsewhere, perhaps more so.

(d) Finally, we may mention a device for taking samples of the formations in the wall of a hole. This consists of a cylindrical steel block with horizontal chambers from which small core barrels can be shot into the formation. These are withdrawn by means of wires attached to them. A full sized core is 1 inch in diameter by 1½ inches in length.

When a sand that was not cored is revealed on an electrical log, some further information about it may be desirable. The coring gun provides one way of getting it.

Until lately the method was not very successful below a depth of 4,000 feet and was somewhat uncertain above that depth, but changes in design and especially the adoption of an improved core barrel have made it effective at any depth and have greatly increased the percentage of cores recovered.

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For description of uses of electrical diagrams in engineering problems, see article entitled, "Electrical Logging Technique as Applied to Petroleum Production." Petroleum Engineer, November, 1936.

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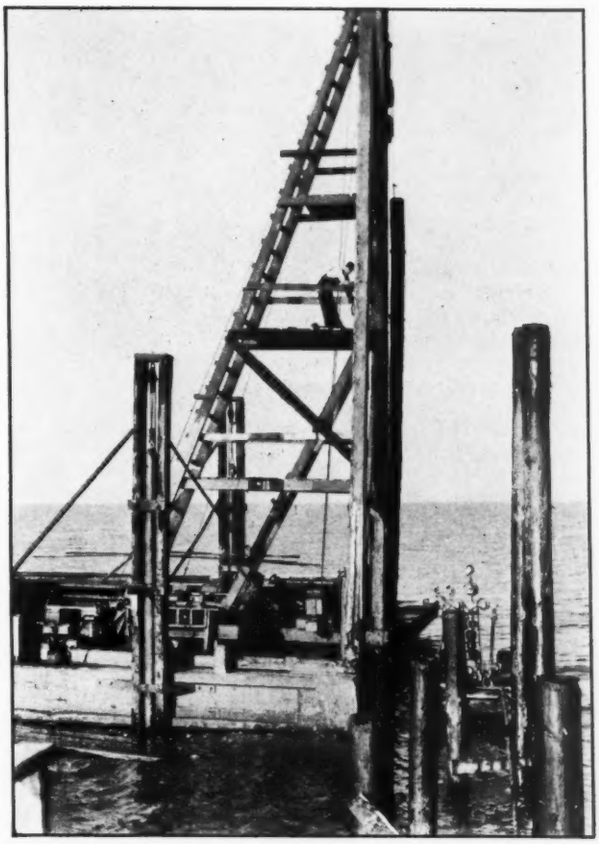
Care to Prevent Water Pollution During Drilling

By NEIL WILLIAMS



Driving piling guards around completed well

Since 1929 the Texas Co. has been carrying on development in a group of water and marsh located fields along the Gulf of Mexico in the extreme southeastern part of Louisiana. Locations of these fields are such that should there be any escape of oil serious consequences might follow. However, through precautions which have been taken, possibilities of contamination of water have been reduced to a minimum, and there has been no perceptible pollution.

The subject of pollution from oil development has received much discussion lately because of contemplated drilling by several major companies in the Gulf of Mexico and the Texas Coast bay.

So effective have been the precautions by Texas Co. to prevent pollution in its operations that thriving oyster beds within less than a mile of at least one of these fields have been unharmed, and fishing and shrimping continue as important industries in the vicinity.

When it is considered there are 10 different fields in this group of water and marsh located operations, the fact there has been no pollution in any is of particular significance. Three of these fields are entirely in exposed open water while the others are adjacent to open water where operations have to be carried on by canals and waterways.

In Texas Co.'s water and marsh located fields of southeastern Louisiana, prevention of contamination has been accomplished under more than ordinary handicaps. Several fields are at considerable distances from land and all operations must be handled entirely over water and without direct contact with land.

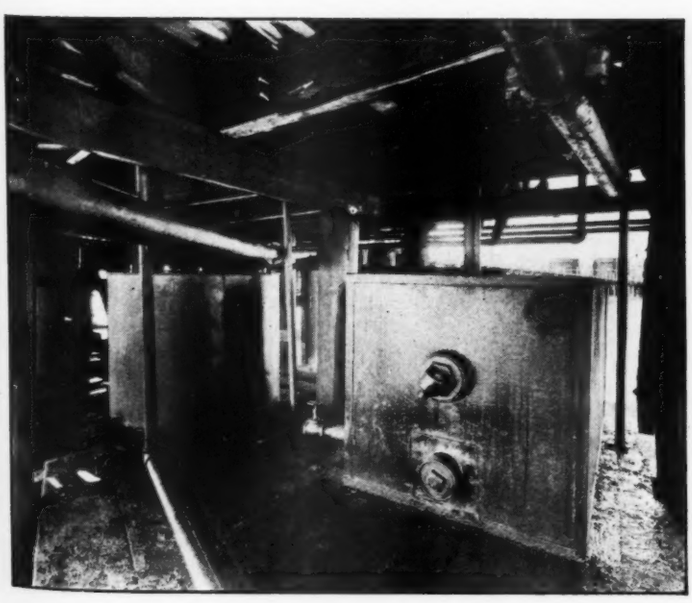
Possible pollution hazards faced in the development of offshore or marsh located fields along the Gulf Coast fall into three general classifications. These are:

1. Leakage or escape of oil coincident to production and handling of oil in normal or routine operation. This includes leaks in lines, slopping out of oil when tubing or rods are pulled in pumping wells, overflow of tanks, disposal of salt water and b.s. from gun barrels, settling tanks or other treating systems.

2. Escape of oil during possible blowouts during drilling or completion of wells. Also in cleaning a well during completion before production is turned into the tanks, there is a certain amount of waste oil bearing wash water to be handled.

3. Release of oil due to possible destruction of well connections, lines or tanks in hurricanes or other storms which occasionally visit the Gulf Coast.

Each of these possible hazards has been given careful consideration by Texas Co., and every effort has been directed toward adoption of practices and provision of facilities and safeguards to eliminate the chance of oil getting into the water bodies around these fields. As just a small amount of oil dropping into the water gives the appearance of serious pollution sometimes, the company is concerned with prevention of escape of even the minutest quantity of oil.



Trap for b.s. under floor of piling-supported gun-barrel

So particular is the company in its operations that not even the salt water produced is permitted to escape although the water in which the field is located may be salty itself, and the location far enough removed that dumping the water could cause little or no damage. The salt water, no matter how efficiently treated out, retains a slight film of oil, and although this ordinarily might not be of sufficient importance to cause any damage, no chances for complaint are taken.

At Lake Barre, one of the oldest of the maritime fields, a substantial volume of water is being handled, which adds to the possible pollution hazard. However, the water is being disposed of effectively in a shallow, caprock cavity well drilled on top the dome in the center of the field. The water is pumped to the disposal well from a central accumulation tank in the field, into which all water and b.s. produced is emptied.

A water gathering line connects the treating plants and tank batteries with the accumulation tank. There are two central treating plant and tank battery installations, one for each of the two leases, and each is tied into the main water line to the accumulation tank. A drain in the bottom of each tank and in the gun barrels opens into the feeder line serving the battery so the water which settles in the bottoms of the tanks can be drawn off and run directly to the accumulation tank. The central accumulation tank is set at a sufficiently low level below that of the tank batteries so the water flows to the tank by gravity. This is possible due to the fact the tank batteries and treating plants are elevated on piling foundations.

B.s. accumulations in the bottoms of the gun barrels are drained into a steel trap or set up in the piling foundation under each gun barrel. It is possible to recycle this b.s. from the reservoir back through the treating system, or run it to the salt water accumulation tank for disposal. There also is a line to the trap from the drain line of the tank battery so any of the tanks can be drained into it in an emergency.

In the Caillou Island field, another of the more important maritime fields, salt water is returned to a shallow sand disposal well. Salt water only recently has made its appearance in this field and

so far its production is very limited. Provision of special treating facilities has not been occasioned, and consequently there has been no hazard of pollution from this source. The oil has been exceptionally clean to handle, and production has been run direct to the central separators and tank battery.

Production and development in most of the other marsh and water located fields operated by Texas Co. have been more limited but similar precautions are being taken.

Chances of overflowing tanks in a battery hook-up, and thus permitting oil to escape, have been minimized by installation of an overflow line connecting all tanks in a battery. By this line, when any tank is filled, the oil overflows into the next tank, and into each succeeding tank in turn. Thus, before any tank can run over, the whole battery must be full, not likely without it being noticed in time.

Another precaution to prevent escape of oil and consequent pollution is a trap under the floor of each pumping well for accumulation of the oil that slops out on the floor when rods or tubing are pulled. The trap is a steel tank which fits around the casing with the bottom tightly sealed to the casing so no oil can leak. Floors of pumping wells are concrete with a sump in the middle around the well, from which there is an opening to the trap below to permit drainage of the oil.

The size of the trap is adequate to handle all oil that might slop over from a pulling job. Some additional oil might accumulate in the trap from possible leakage around the polished rod, although this leakage would be slight as the rods are watched closely. The traps are inspected daily and when it is desired to empty them, the oil is pumped into the line by a portable hand pump.

Drippings from hose line connections used in loading oil from storage into barges also are trapped. Although these drippings constitute a very trivial quantity, whenever a connection is broken a drum is always placed under the connection. There never is much oil in the hose as the hose empties into the barge when the stream of oil is stopped.

Blow-out hazards have received close attention of the operators, and every precaution is exerted to prevent a well getting out of control. High pressures have been encountered in three of the fields so far, including Garden Island Bay, Bay St. Elaine, and Lafitte, but through methods of control worked out the company has been successful in handling these pressures without trouble. At Lafitte, one of the marsh fields, where production is being developed in sands from 9,500 to below 10,000 feet, some of the wells have surface pressures of more than 4,000 pounds.

Double blow-out preventer hook-ups are used on all wells, including a screw type, hand-operated preventer with sliding rams, on top, and a blind ram type preventer on bottom. When drilling in a combination tubing head and blow-out preventer is used. At no time from setting of the surface casing through completion is a well left open for a blow-out.

An adequate casing program also is followed to provide protection for the wells. The program at Garden Island Bay consists of approximately 300 feet of 18⅝-inch or 20-inch conductor pipe, a first surface string of 16-inch pipe on top the high pressure gas sand around 800 feet, and a second surface string of around 1,200 feet of 12½-inch pipe to case off the gas sand horizon. Open hole then is drilled to the producing horizon. In other fields only approximately 100 feet of conductor pipe is needed, and in the absence of any known shallow high pressure gas sands, one surface string is adequate. In the Caillou Island field, 1,200 feet to 1,800 feet of surface casing is used, 10¾-inch pipe being run in the shallower sand wells and 13⅜-inch casing in the deeper sand wells.

In these wells the practice is to start the holes with the same size bits as the conductor pipe. No

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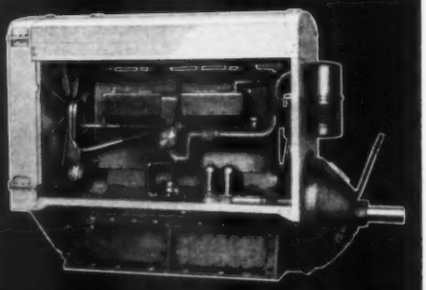

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This type of Waukesha Engine, designed for oil field service, has all the economy, low maintenance and reliability for which Waukesha Oil Field Engines are famous.

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These engines have many other advanced design features. The crankcase and cylinder frame are cast in one unit . . . the heavy crankshaft has seven 3¾-inch main bearings . . . the wet sleeve cylinder liners are removable . . . and it has a water-cooled manifold, full pressure lubrication and a built-in centrifugal governor.

For complete details and specifications—write today for Bulletin 1058. *Waukesha Motor Company, Waukesha, Wisconsin.*

WAUKESHA ENGINES

UNUSUAL: Ice on the CALIFORNIA ORANGE TREES but SHEAR-RELIEF VALVES ON CALIFORNIA SLUSH PUMPS is a common sight!

Slush pumps on this wildcat location in an orange grove near Anaheim, California, are well protected by Abercrombie SHEAR-RELIEF Valves, this operator's insurance against the hazards of excess pressure. As you know, the nail shears if pump pressure reaches the set point, and the sheared nail is the only damage. And note in the picture why anyone can't go wrong in setting. The nameplate not only shows nail sizes for given pressures, but the nail gauge eliminates any chance of mistaking nail sizes.

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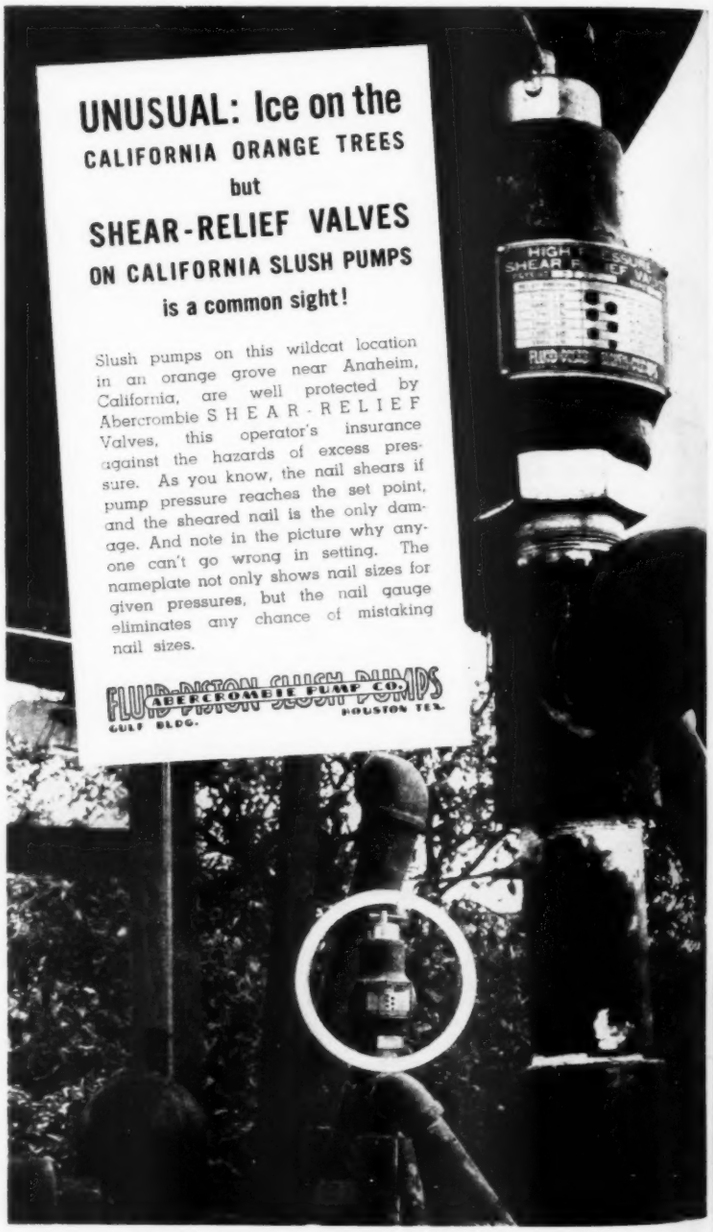
ABERCROMBIE PUMP CO.
GULF BLDG. HOUSTON TEX.



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AIR FILTERS

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The form below will bring an illustration, specifications and price of the correct Dust-Stop for your equipment. Fill it in, attach to your letterhead and mail today. Owens-Illinois Glass Company, Toledo, O.

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Make_____
Bore_____in. Stroke_____
No. Cylinders_____ RPM_____
☐ Two-cycle ☐ Four-cycle
☐ Single-acting ☐ Double-acting
Size and type of intake_____

AIR COMPRESSOR

Make_____
Bore_____in. Stroke_____
No. Cylinders_____ RPM_____
☐ Single-acting ☐ Double-acting
Size and type of intake_____

DIESEL ENGINE

Make_____
☐ Plain-Scavenging . . . . (Enter under "Gas Engine")
☐ Super-Scavenging . . . (Enter under "Gas Engine")
☐ Super-Charged . . . . . (Enter under "Compressor")

attempt is made to shut out the water, and the large sized hole is drilled to within about a couple of feet of where it is expected to run the conductor pipe. Then the conductor pipe is driven to the bottom of the hole, and an additional two or three feet. The upper formations are so soft and mulky this can be done. Cement is not used on this pipe as the formations close in and form a seal. The surface strings are cemented, and at Garden Island the first surface string at 800 feet is cemented to top as a precaution against shallow gas sand blowing out around the pipe. When a well is completed, the conductor pipe is pulled.

Drilling mud is watched closely to insure proper control and conditioning, which has played an important part in prevention of blow-outs. So far there have been no major blow-outs except at Garden Island Bay, where in early development the shallow gas sand gave considerable trouble. With increased knowledge of conditions there and with special precautions, the company has been able to control the gas pressures readily.

When a well is being washed or swabbed in, a barge with a reserve tank usually is tied alongside the well so the well can be cleaned into the reserve tank. This prevents possibility of any oil-bearing wash water escaping. The drilling barges also carry reserve pits into which the well can be cleaned in an emergency. These pits usually have a capacity of around 1,200 bbls.

All drilling mud is conserved because extra mud must be barged in from a central mud mixing plant at considerable distance from the fields. Although the escape of drilling mud would not constitute contamination, precautions are taken to prevent loss of any of it. Any extra mud made by a well is run to a reserve tank for use in other wells if needed.

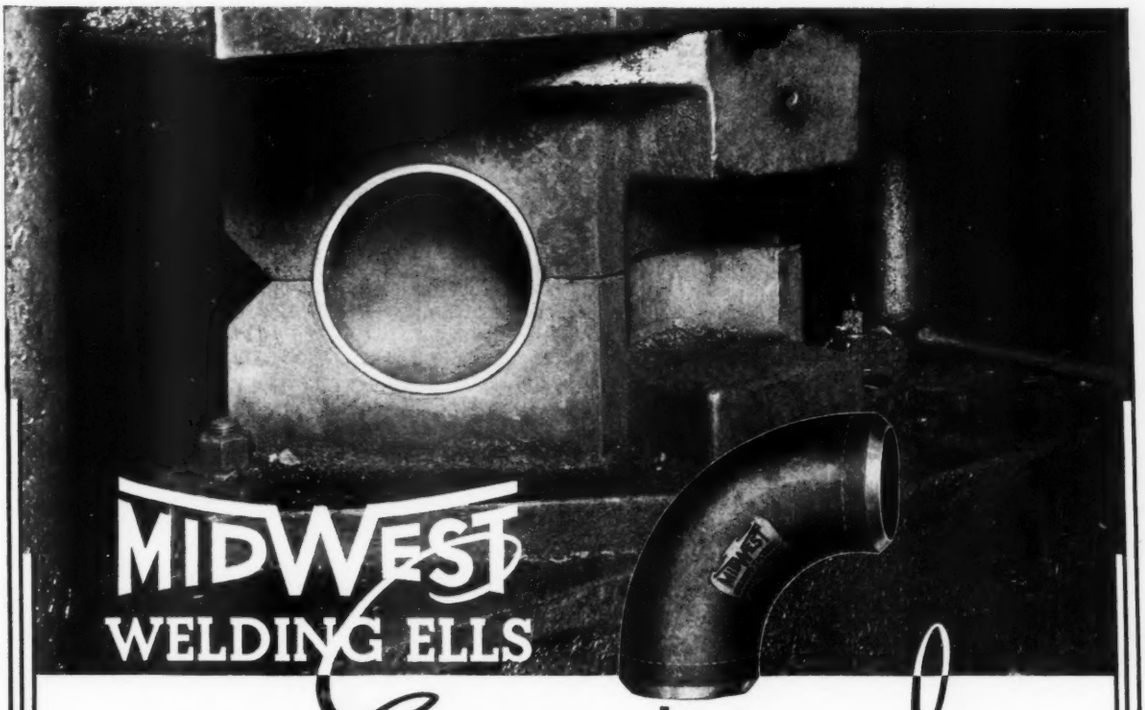
Possibilities of oil getting loose due to broken well connections and lines; the result of hurricanes or other storms, have been reduced to a minimum. By means of a special device with which wells are equipped, production is shut off automatically should the surface connections break, or become damaged so as to open the well. This device is a ball operated valve which is run in in a cage on the bottom of the tubing string. It works in conjunction with a bottom-hole choke, which serves as a seat against which the ball closes when the rate of production increases above a certain set maximum.

Normally, no wells are permitted to produce through a larger surface opening than a three-eighths-inch choke. The ball device on the bottom of the tubing is designed to let only that volume of fluid into the tubing that can be produced through the three-eighths-inch choke on the surface. Up to that rate of flow the back pressure holds the ball in its seat on the bottom of the cage, leaving the opening at the top of the cage into the tubing. When connections at the surface are broken, or for any reason the well is opened more than the three-eighths-inch choke, the increased rate of flow permitted at the surface offsets the back pressure held on the ball at the bottom, forcing the ball up against the seat in the top of the cage, closing the opening into the bottom of the tubing.

In completion, the tubing is sealed off to the casing, closing the casing at the bottom so there never is any pressure between tubing and casing. When production through the tubing is shut off, no oil can get to the surface.

When storm warnings are received it is the practice to open all the wells, which shuts off the flow in advance of possible damage to surface connections. Should one of these valves fail to work it would be known in time to kill the well.

Substantial piling guards are erected around all wells, and it is likely these would protect the well from serious damage except possibility in the severest storms. Unless struck by some heavy object, or battered by timbers, these guards and the well are believed able to withstand the waves.



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If the man who actually does the pipe welding bought the fittings, dimensional accuracy and uniformity would receive much more consideration than is frequently the case. Any pipe welder will tell you that these features are most important because they save time (and therefore money) in lining-up the pipe and fitting, and in the welding . . . they also assure more uniform welds.

As illustrated by the close-up photograph of the sizing press, every Midwest Welding Ell is reduced to accurate size and shape by final working of the metal in compression at a forging heat . . . it is not extruded or stretched. This positive control provides (1) true circular cross section, (2) uniform wall thickness, and (3) accurate radius, included arc and tangents.

Unique fixtures used to machine bevel the ends assure an included angle of exactly 90° or 45°. Inspection is rigid and every Ell is subjected to a severe hydrostatic test.

Ask for a copy of Bulletin WF-36 which explains the many other features of Midwest Welding Ells.

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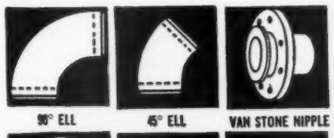


MIDWEST
WELDING FITTINGS
IMPROVE
PIPING DESIGN AND
REDUCE COSTS

Large Reserves of Gas Being Found in Several Gulf Coast Districts

Until comparatively recent years the existence of natural gas in commercial volume on the Gulf Coast was not known. Large reserves had been built up in Southwest Texas, and in some adjacent fields of the Lower Gulf Coast area, but in the original Gulf Coast district, comprising southeastern Texas and southern Louisiana, what little gas was produced up to recent years was largely incidental to the production of oil.

Although among the older fields on the Gulf Coast were many with large flush production, flowing pressures were largely hydrostatic, and in open flow, which characterized most of those fields, any gas head was quickly dissipated. Fields until as late as 1930 to 1932 were mostly of the shallow, piercement salt dome type. Such fields usually were marked by badly broken and lenticular sands, and being small in area, were not conducive to the accumulation of substantial gas reserves.

The absence of gas in these fields forced gas companies desiring to serve domestic and industrial requirements on the Gulf Coast to look to Northeast Texas, North Louisiana, and Southwest Texas fields for sources of supply. To bring gas from those fields, more than 200 miles distant, required the laying of long trunk lines. Five of these were laid, the first being completed late in 1925.

As lately as 1930 and 1931 no fields were opened on the Gulf Coast with any sizable gas production. Since then with the advent of the more deeply seated types of fields with "blanket" sands, and with the development of the Marginulina, Frio and Cockfield horizons, the picture has been materially altered. Gas has figured prominently in the production of many of these newer fields.

With the increasing number of these fields, the Gulf Coast has grown rapidly in importance as a gas reserve. Pledger, Brazoria County, with an estimated reserve of 2,300,000,000 feet of gas, has more reserve than all the known Southwest Texas fields put together.

The majority of these large gas reserve fields are within a radius of 50 to 75 miles of Houston. The most important gas producing fields in this area, listed in an accompanying tabulation, number 22, and have an estimated reserve totaling 5,635,800,000 feet.

Next to the Pledger field, Dickinson, Galveston County, has an estimated reserve of 1,100,000,000,000 feet. Anahuac has an estimated reserve of 800,000,000,000 feet, and Conroe and Tomball a reserve of 500,000,000,000 feet each.

So far in Coastal Louisiana, development of gas reserves has not been so extensive, but gas in substantial volume has been found in a number of newer fields. Among these are Iowa, Gillis, Tepetate and Lafitte. At Big Lake, Cameron Parish, Bayou Mallett, Acadia Parish, and South Jennings, Jefferson Davis Parish, production has been largely gas with distillate. Important reserves have been indicated at Bay St. Elaine, one of Texas Co.'s maritime fields in southern Terrebonne Parish, in the extreme southeastern part of the state. There two shallow gas wells were completed several years ago, each capable of making more than 100,000,000 feet daily. Due to the isolation of the field, no commercial use has been made of this gas so far, and the wells are shut in except for what little fuel may be needed for field development. Garden Island Bay, in the Mississippi River delta, another of these fields, has indicated large gas reserves. Various tests on wildcat prospects have resulted in gas blowouts, or high gas pressures, and in a number of fields gas sands have been passed up, but the importance of these areas and sands has not been determined.

In the case of Tepetate, Acadia Parish, owned by Continental Oil Co., gas is being returned to the sand in a repressuring project, so that much of the gas will not be available as an immediate reserve. The repressuring project has been put in operation only within the past few weeks. An 8⅝-inch line from the field to the Mathieson Alkali Works at Lake Charles, approximately 45 miles, has been providing a market outlet the past year.

Until now there has been no market outlet for gas produced at Gillis, Calcasieu Parish. Union Sulphur Co. has been returning its gas to the sand in a repressuring project, but otherwise the only use for the gas has been for field fuel purposes. Within the past few weeks, Continental Oil Co. has made a deal with Fohs Oil Co. for its gas, and is constructing a gasoline recovery plant. The residue gas is expected to augment the company's supply from the Tepetate field.

Outlet for gas at Lafitte, Jefferson Parish, recently was provided by laying an 8-inch line to Freeport Sulphur Co. sulfur plant at Lake Grande Ecaille (Lake Washington), Plaquemines Parish, a distance of 24 miles. Lake Grand Ecaille is an oil field, but there is not sufficient gas for fuel requirements for the sulfur plant in the field. Both Lafitte and Lake Grand Ecaille are in the marsh district of southeastern Louisiana, and laying of the line was entirely through water.

Gas produced at Iowa, on the Calcasieu-Jefferson Davis Parish line, is processed through a gasoline plant operated by Shell Petroleum Corp. What gas is not needed for field use is taken by the United Gas System. Until development of Iowa, the main part of which took place during 1932-35, gas for the South Louisiana system was supplied entirely from Northeast Texas and North Louisiana through a tiein with United's trunk line from Northeast Texas to Beaumont.

Producers in several fields have been considering provision of their own outlets. Chief among these is Humble Oil & Refining Co., which, within the past year and a half, has been getting into the gas business strongly. Within the past several weeks it has completed and put in operation a 10-inch gas line from the Tomball field to Houston, and thence to Port Neches and Port Arthur. This line will serve industrial consumers on the Houston Ship Channel and in the Port Arthur refinery district in competition with the companies now supplying gas.

The Tomball field with its estimated 500,000,000,000 feet of reserves is expected to be the main supply for the line. In that field, 25 miles north of Houston, many wells have been shut in because of inability to produce them due to their high gas-oil ratios and absence of market outlet for the gas. A feeder line from the Anahuac field, Chambers County, makes available another large gas reserve for the system. Provision of a market outlet for Anahuac has not been necessary as most of the wells can be completed with low gas-oil ratios. In normal operation, the production of gas has barely been sufficient to meet fuel requirements of drilling rigs without drawing on a well completed in the gas sand especially to supply fuel. To make gas available for the line, two wells have been drilled and completed in the gas sand as gas wells.

From the Tomball field, gas is being furnished by Humble Oil & Refining Co. to residents of Tomball without charge. This requires a comparative-

Principal Gas Reserves Opened in the Upper Texas Gulf Coast District

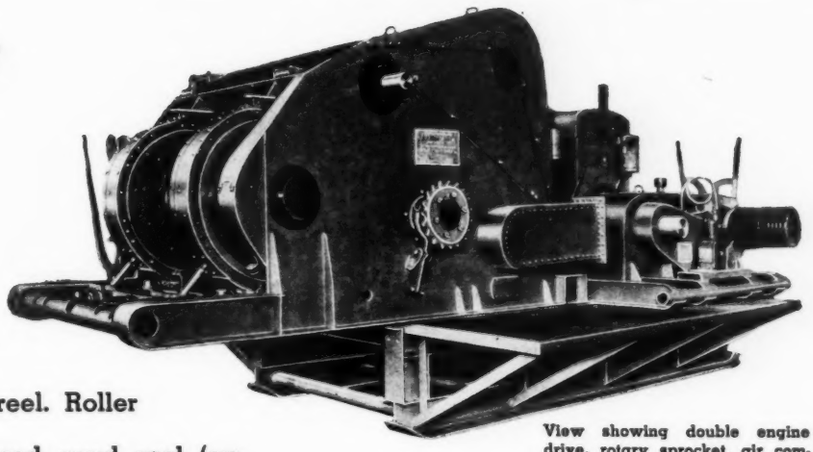
Field—	County	Disc. Year	Producing formation	Estimated prod. area (acres)	Estimated sand thickness (feet)	Estimated reserve (cubic feet)
Pledger	Brazoria	1932	Frio	6,500	110	2,300,000,000,000
Dickinson*	Galveston	1934	Frio	4,000	90	1,100,000,000,000
Anahuac	Chambers	1935	Marginulina-Frio	5,000	80	800,000,000,000
Conroe	Montgomery	1931	Cockfield	17,000	20	500,000,000,000
Tomball	Harris	1933	Cockfield	16,000	18	500,000,000,000
Amelia†	Jefferson	1936	Frio	1,000	80	200,000,000,000
Katy	Waller	1934	Cockfield	100	200	60,000,000,000
Cotton Lake	Chambers	1936	Marginulina-Frio	1,500	10	50,000,000,000
Old Ocean	Brazoria	1934	Frio	500	30	50,000,000,000
Manvel	Brazoria	1931	Marginulina-Frio	100	15	50,000,000,000
Thompson	Fort Bend	1931	Marginulina	500	30	30,000,000,000
Seabreeze	Chambers	1936	Frio	500	20	16,000,000,000
Greens Bayou	Harris	1936	Cockfield	500	8	8,000,000,000
Silsbee	Hardin	1936	Cockfield	300	10	6,000,000,000
Labelle	Jefferson	1937	Frio	300	10	6,000,000,000
Raccoon Bend	Austin-Waller	1927	Miocene-Jackson-Cockfield	1,500	10	6,000,000,000
Satsuma	Harris	1936	Cockfield	200	10	4,000,000,000
Sandy Point	Brazoria	1937	Frio	100	20	3,000,000,000
Eureka	Harris	1934	Cockfield	100	20	3,000,000,000
Hitchcock	Galveston	1937	Miocene	100	20	2,000,000,000
Danbury	Brazoria	1936	Frio	50	20	1,000,000,000
Ace	Polk	1932	Cockfield	50	10	800,000,000
Totals and averages				55,900	38 2	5,635,800,000,000

*Includes Gillock area. †Includes West Beaumont.

AN EIGHT SPEED PORTABLE RIG FOR 6,000-FEET DRILLING

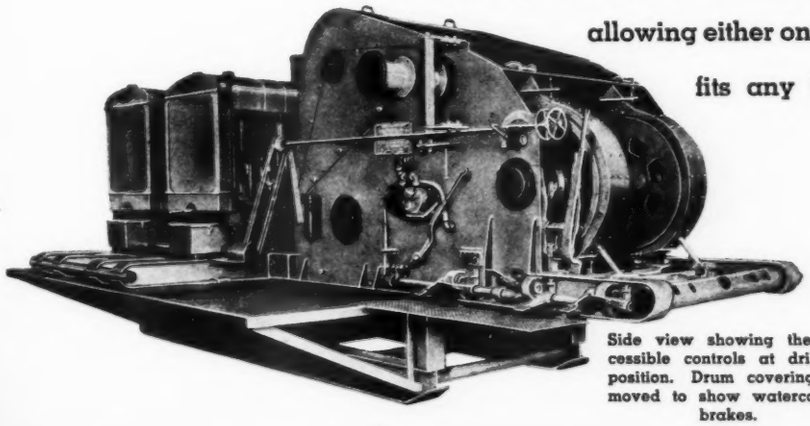
WITH OR WITHOUT SAND REEL

A FEW OF THE MANY FEATURES OF THE NEW PORTABLE RIG, MODEL R-876-8:



View showing double engine drive, rotary sprocket, air compressor and pump drive.

Eight speeds forward, six speeds reverse on drum, rotary shaft and sand reel. Roller Bearing equipped throughout. Enclosed sand reel (optional). Self-energizing brakes are watercooled by circulation in shoes attached to bands. Double compound leverage gives 90% brake area contact. Dual drive (gasoline, natural gas or Diesel fuel engines) which can be compounded into draw-works or pumps. Air controlled engine clutches. Air compressor supplied with rig. Pump is provided to furnish force-feed lubrication to all chains, bearings, sprockets and shafts. Heavy-duty friction clutches on drum and rotary shafts. Substructure, allowing either one or two pumps to be set on ground level, fits any height derrick and provides walkway around entire rig.



Side view showing the accessible controls at driller's position. Drum covering removed to show watercooled brakes.

Complete specifications will be sent upon request. (Ask for Bulletin 38.)

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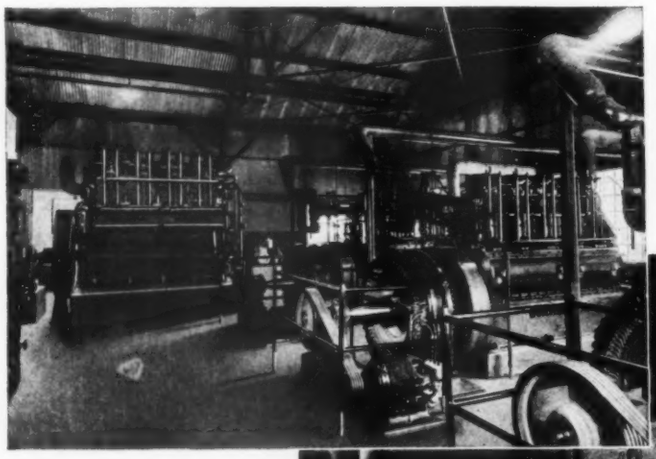
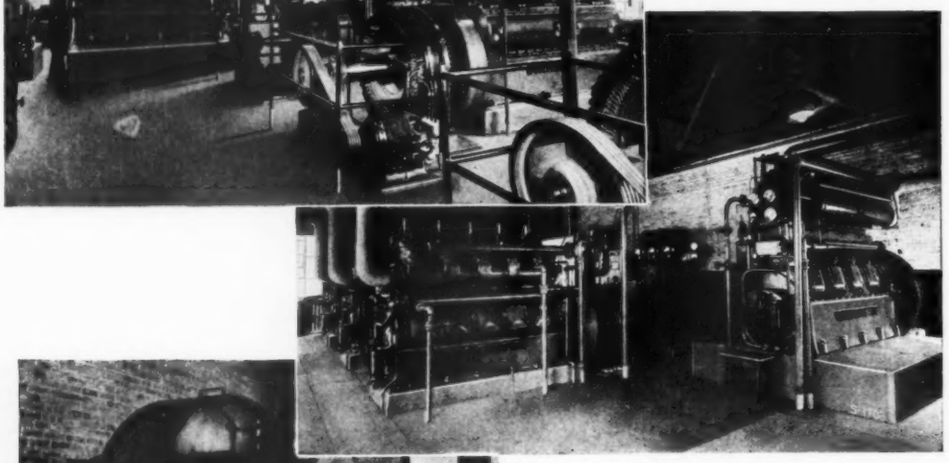
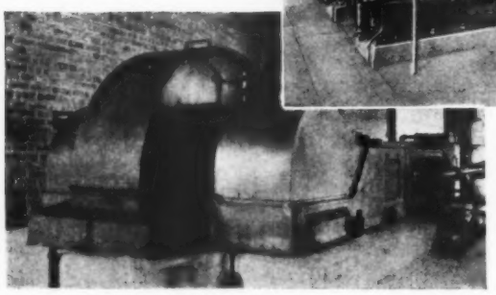


Three Worthington 150-hp. Gas Engine Generator Units . . . Worthington Multi-V-Drive on exciters . . . at Coastal Refineries, Port Isabel, Texas. Engines equipped to operate with gasoline if necessary. In background, Worthington 200-hp. Diesel Engine.



Another view of the Gas Engines, with the Diesel Engine at the right. The Diesel Engine is driving the Worthington Hot Oil Pump shown in illustration at left.



Worthington 4½" x 18" Hot Oil Charging Pump, separated by fire wall from the Diesel Engine shown above.

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ly small volume. The company put in the gas system, as well as a water system, for the town in return for the privilege of townsite drilling.

Humble Oil & Refining Co. is operating three gas lines out of the Pledger field, which supply the sulfur plants of Texas Gulf Sulphur Co. at Boling, Long Point and Old Gulf (Big Hill). The Boling line consists of 10 miles of 6-inch pipe; the Long Point line 17 miles of 4-inch pipe, and the Old Gulf line 30 miles of 6-inch pipe. Humble Oil & Refining Co. and Danciger Oil & Refining Co. have 12 gas wells between them in the field.

In the Dickinson field, Galveston County, gas from leases of Stanolind Oil & Gas Co. and Pan American Production Corp. is being piped to the Pan American refining plant at Texas City, a short distance, where it is used for fuel and for processing in a polymerization unit recently placed in operation. Bennett Pipe Line Co. has another line (6-inch) from its properties to the same refinery. Additional gas is being taken from the field by Houston Pipe Line Co. which delivers to distributing companies serving Dickinson, League City, Texas City and Galveston. Houston Pipe Line Co.'s line also ties into the company's Houston system.

United Gas System has a line out of the Conroe field to its trunk system from Northeast Texas to Houston, and is taking some gas from that field. Conroe gas also is being piped to the town of Conroe for domestic distribution. Conroe is another field in which, although available reserves are large, gas production generally has been reduced to a comparatively small volume per well through efficient practices and ability to case off the gas sand in most instances. Due to the large number of wells, the aggregate gas production, however, mounts to a substantially high volume.

At Eureka, on the northwestern outskirts of Houston, production is confined to one well, completed in 1934 by Means & McGee. It has an estimated daily potential of over 100,000,000 feet. Houston Oil Co. has taken over this well, production being tied into Houston Pipe Line Co. system, serving industrial consumers at Houston and delivering to Houston Natural Gas Co., one of the distributing companies in Houston.

Most of the remaining large gas reserve fields have no outlets. In several, like Anahuac, provision of an outlet is not necessary as production is reduced to a minimum through efficient practices of flowing.

The development of gas producing fields on the Gulf Coast has been the occasion for building gasoline recovery plants. Up to 1934, there were only two gasoline plants on the Gulf Coast, including the Lower Texas district. These consisted of a plant at Raccoon Bend, built in 1931 by Humble Oil & Refining Co., in connection with a repressuring project in that field, and one at Refugio built in 1931 by United Gas System at its booster station. There now are 13 plants on the Gulf Coast (none in Southwest Texas). These include five in the Lower Texas Gulf Coast, four in the Upper Texas Gulf Coast, and four in Coastal Louisiana (one of the three under construction). These plants are:

Lower Gulf Coast district: United Gas System, Agua Dulce, Nueces County; United Gas System, Refugio, Refugio County; Clymore Oil, Inc., Refugio; Manhattan Gasoline Co., Plymouth, San Patricio County, and Southern Alkali Co., Saxet Heights, Nueces County.

Upper Texas Gulf Coast district: Humble Oil & Refining Co., Raccoon Bend, Austin County; Humble Oil & Refining Co., Conroe, Montgomery County; Midland Gasoline Corp., Conroe, and Paramount Gasoline Corp., Pledger, Brazoria County.

Louisiana Gulf Coast: Shell Petroleum Corp., Iowa, Calcasieu-Jefferson Davis parishes; Continental Oil Co., Tepetate, Acadia Parish; Continental Oil Co., Gillis, Calcasieu Parish (under construction), and Texas Co., Lafitte, Jefferson Parish.

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High Joint Strength—easy stabbing, self-aligning, 100% leak-resistant.

2
Minimum Diameter at Joint—streamlined contour, no projecting shoulders.

3
Maximum Speed in Running—can be run virtually twice as fast as regular casing.

4
Positive Resistance to Leakage—pipe will collapse or expand without leakage at the joint.

5
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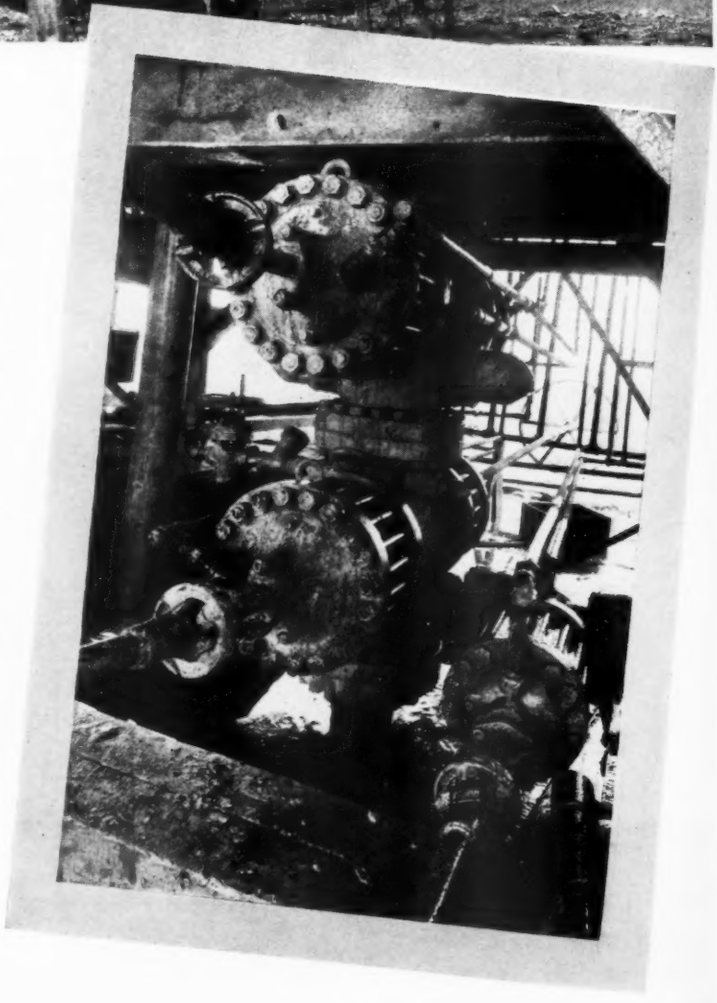
Sandwiched between the double hazard of high formation pressures below, and 33,000 volt highlines a few feet from the derrick leg, the big Diesel-Electric rig of R. B. (Cap) Fields, Oklahoma City drilling contractor, recently moved to the Gulf Coast and now drilling at Dickinson, Texas, is fully protected against the menace of blowouts by a Cameron full-pressure operated drilling control hook-up. The control unit selected by Hardy George, field superintendent, consists of a 13⅝" Cameron Type SDA Preventer with drill pipe rams, flanged to the casing; a 13⅝" Type SDA Preventer with blind rams, flanged above; and a 7" Cameron Pressure Operated Gate Valve flanged to the flowline opening of the lower preventer. Three, four-way control valves provide instant and positive control of the entire unit.

High speed closing—positive shut-off—absolute dependability—these are the features of Cameron Pressure Operated Control Units which have placed them under almost all drilling derricks in high pressure areas.



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Offshore Drilling on Gulf Presents Problems

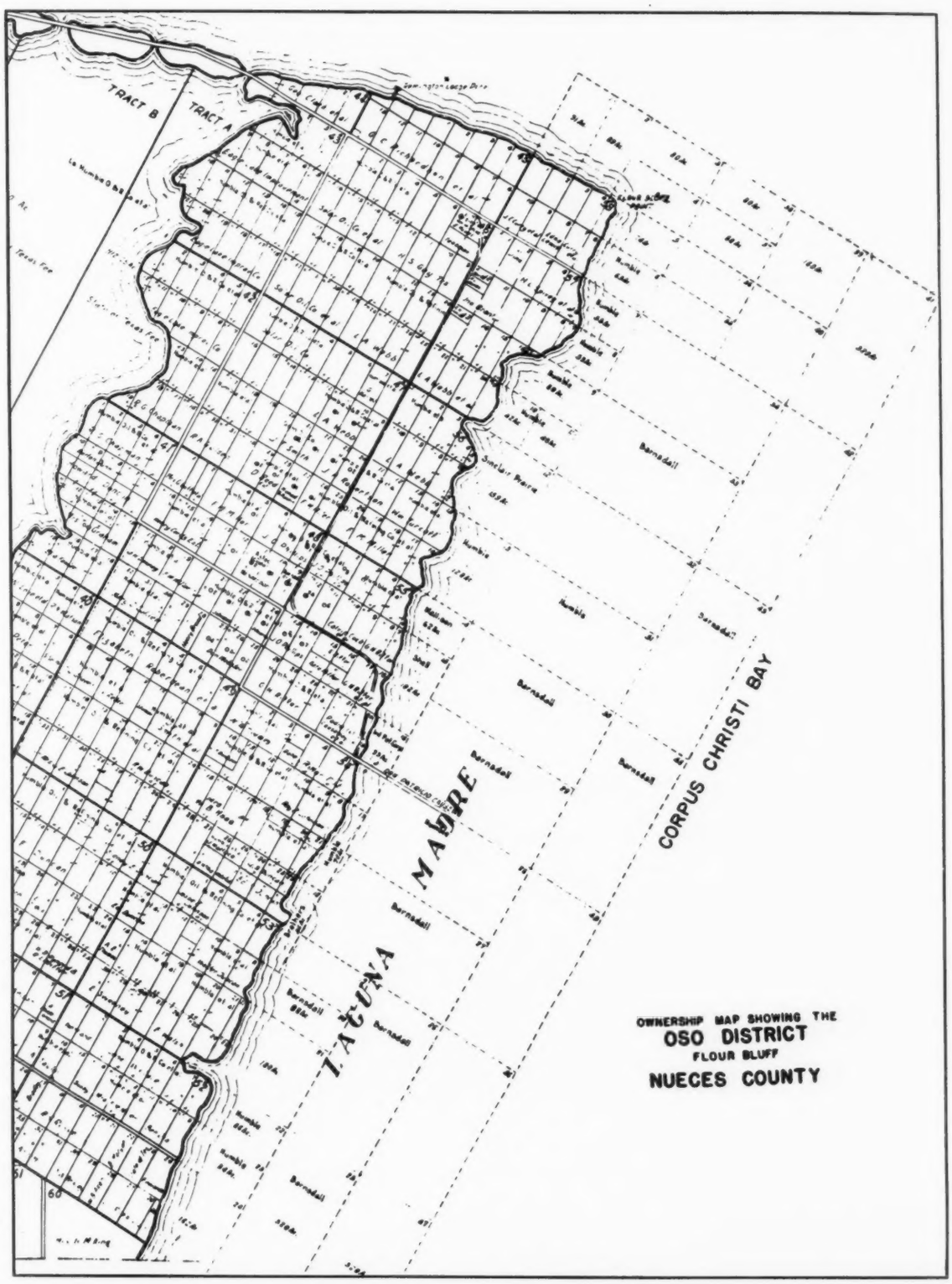
By JAS. D. HUGHES
Vice President, Eastman Oil Well Survey Co.

The Gulf Coast fields of Texas and Louisiana have always possessed the reputation of presenting a greater diversity of drilling conditions and problems than any other single area. It is natural such a diversity would lead to numerous practical applications of controlled directional drilling. To date every conceivable form of directional drilling has been practiced in this area with the exception of the few that shall be the subject of this discussion.

The recent bidding upon and leasing of submerged properties lying under the waters of Corpus Christi Bay, and other waters bounding the coast line of Texas and Louisiana, would indicate that these properties will in all probability be drilled in the very near future. Indeed, drilling has advanced to within a half mile of the shore line of Laguna Madre in the Flour Bluff field, and if the published reports can be believed, the Humble is making preparations to drill off High Island in the Gulf of Mexico proper.

There is nothing new or novel in drilling over a water site; this has been going on for years in various corners of the world. Lake Maracaibo is perhaps the leading example of such marine activity, with Terrebonne Parish of Louisiana and Elwood, California, tying for place and show. There are, however, distinct differences between the methods employed in the development of each of these localities. In Lake Maracaibo, for example, it has long been the practice to construct an individual concrete piling structure over each location, from which a single well is drilled as near vertical as possible. About this structure, when drilling is in progress, bob a boiler barge, a mud barge, and a pipe barge in perfect marine discordance, calling for a high order of dexterous underpinning on

(Continued on Page 166)



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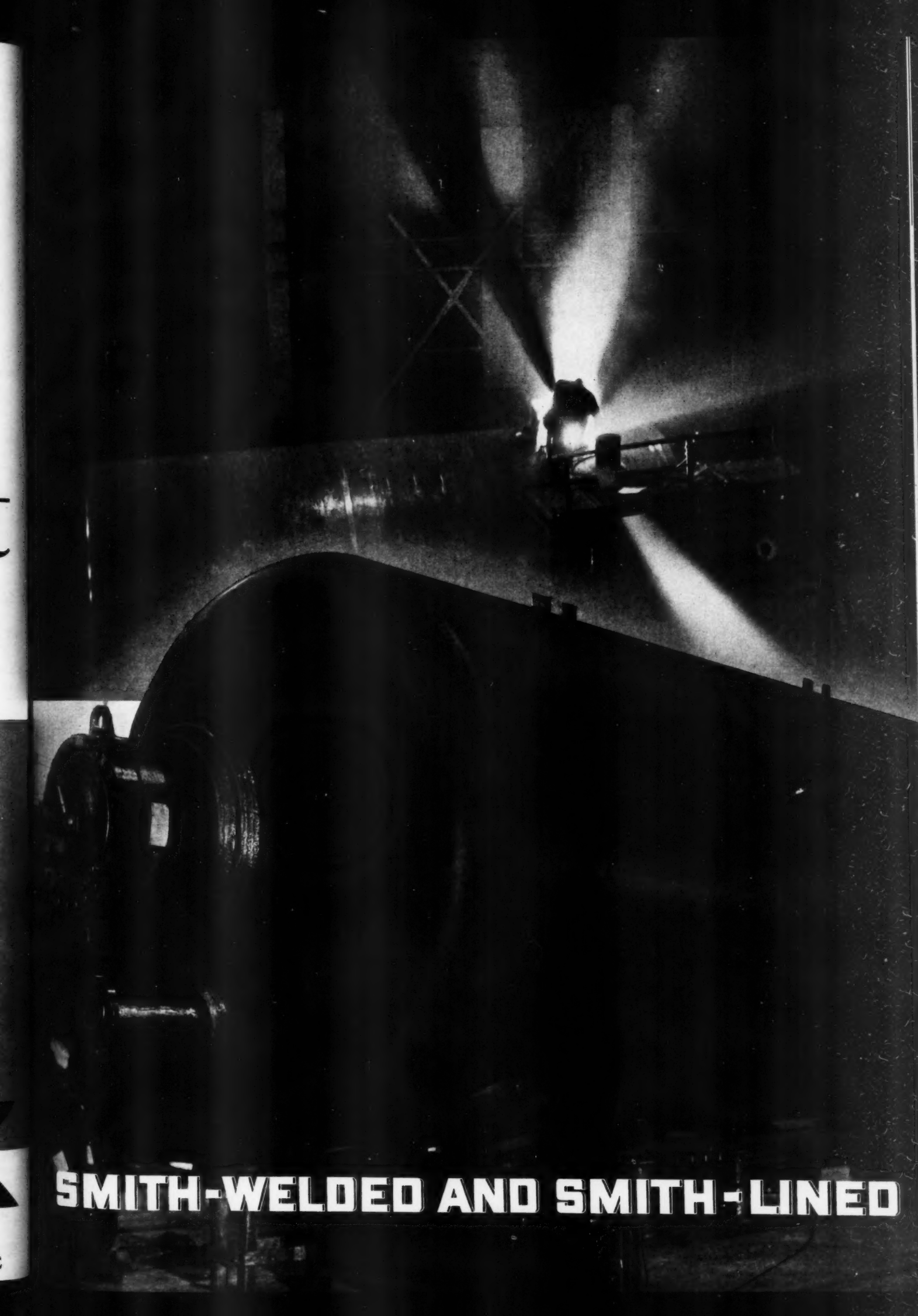
SMITH-WELDED AND SMITH-LINED

(Continued from Page 163)

the part of the drilling personnel. These locations extend from close inshore in comparatively shallow water, a distance in the neighborhood of 5 miles out into the lake in much deeper water. Except for the wells nearer shore that are connected with burro walks, each well is isolated from its neighbor and all communication is by boat.

Until recently those companies operating in the open waters off the Louisiana coast have erected wooden piling structures from which a single well would be drilled. This practice has now been

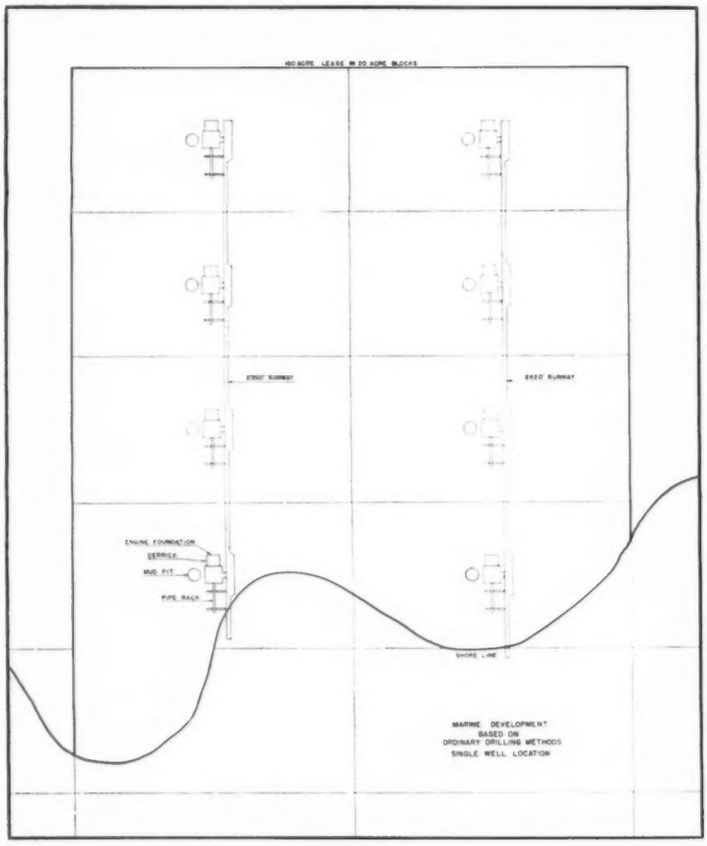

Figure 2

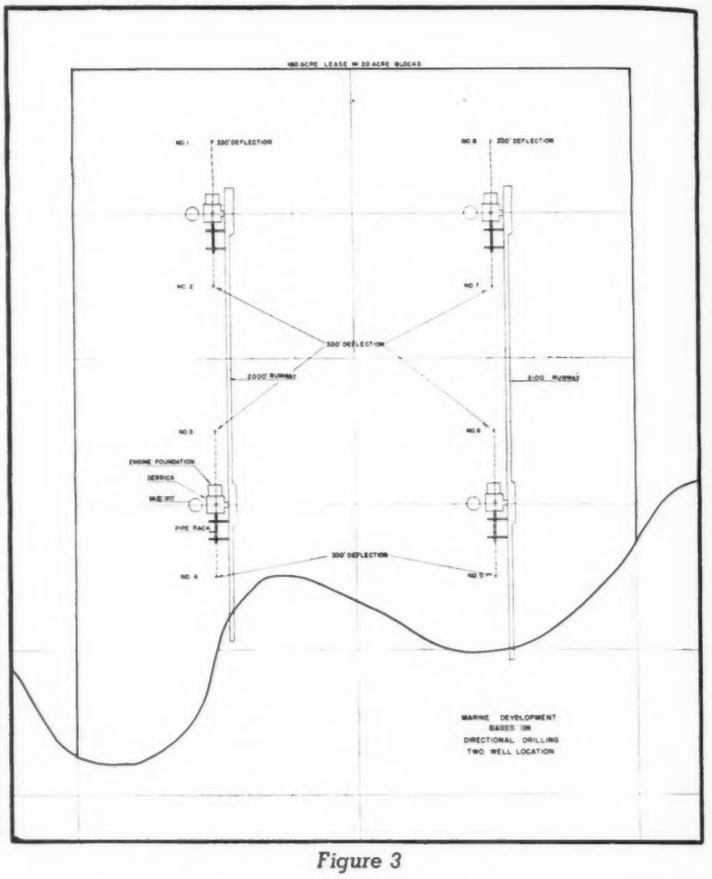

Figure 3

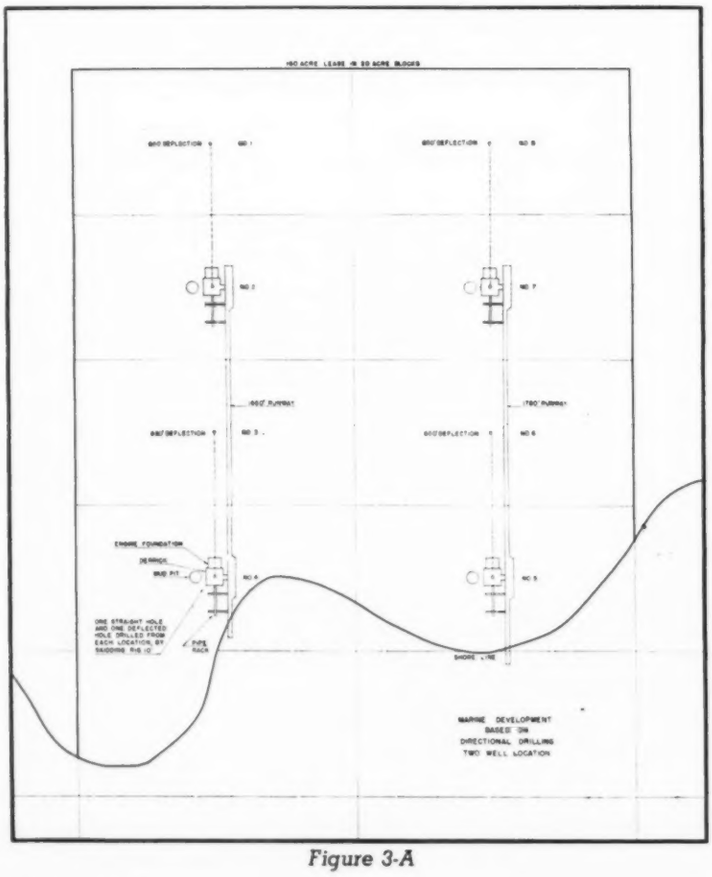

Figure 3-A

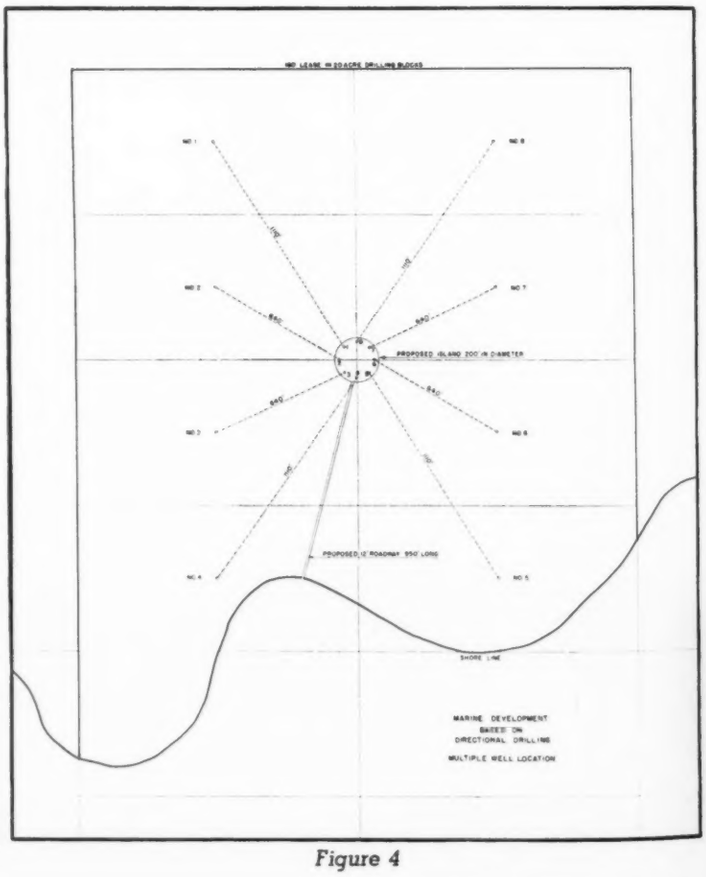

Figure 4

THEY CHAINED IT UP WITH HYPER AND HURRIED DOWN TO "PAY"!

● O. W. Dyer, drilling contractor, Houston, Texas, is setting a real example, in this deep Gulf Coast hole, of just what good crews can do with a bang-up drilling outfit. With the big, new Gumbo Buster Unit Jack Shaft Drawworks 1805, equipped 100% with Link-Belt 3-Bar Hyper Chain, they spudded March 10, set 180′ of 16″ pipe and 1850′ of 10¾″ pipe, and on March 24 were nearing the 8100′ pay .... no trouble; not a minute's delay. And it won't be long now until the dollars invested in this hole will be flowing back to the lease owner. Performance like this on job after job is why Otis Dyer uses Link-Belt chains exclusively .... and why so many modern rigs are today equipped with Link-Belt chains.

●

CHAIN SPECIFICATIONS ON THIS GUMBO BUSTER DRAWWORKS:

Engine drive.....Hyper API 4 chain
Rotary drive.....Hyper API 3 chain
High-speed jack shaft to line shaft
.....37 links Hyper API 4 chain
Low-speed jack shaft to line shaft
.....43 links Hyper API 4 chain
High-speed line shaft to drum shaft
.....45 links Hyper API 4 chain
Low-speed line shaft to drum shaft
..... 47 links Hyper API 4 chain

●

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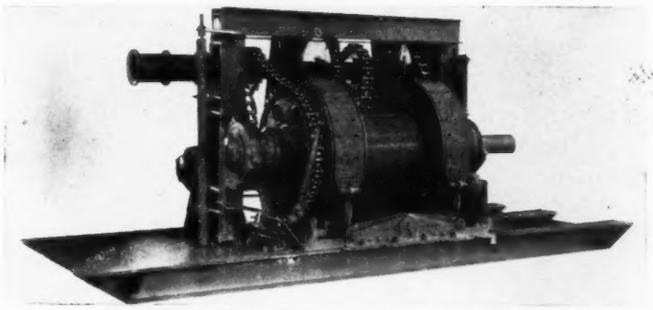
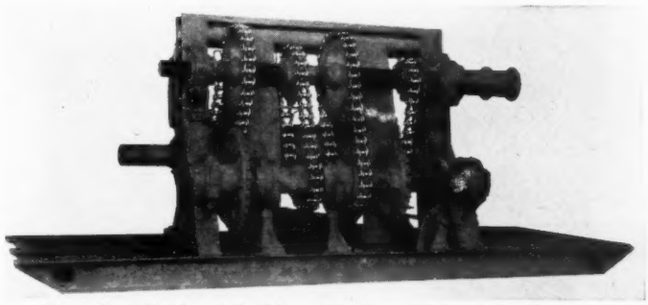
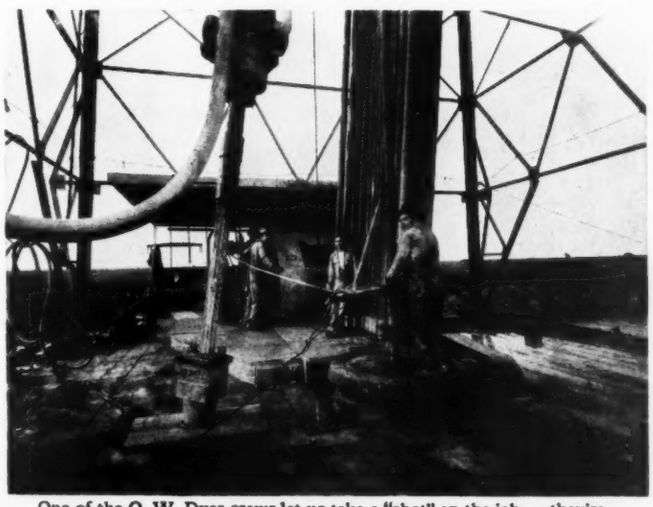


Front view of Gumbo Buster Drawworks, photographed without chain guards, at American Well & Prospecting Co.'s plant.



Rear view, showing chain drives from line shaft to drum shaft and jack shaft.



One of the O. W. Dyer crews let us take a "shot" on the job... they're proud of this modern set-up, too.

LINK-BELT Rotary CHAINS

practically replaced by the use of the revolutionary drilling barge which can anchor over a location and drill and complete a well with no construction necessary other than the protective piling and walkways erected after the completion. In both the above cases, the waters have been sufficiently quiet and shallow to permit the operations cited.

Conditions off the coast at Elwood are a little different. The greater depth of the water, combined with surf and tides, made it necessary to expend substantial sums in the construction of drilling sites. To derive a maximum convenience and a minimum per well cost, it was found expedient and practical to construct a central drilling site from which as many as six or seven wells could be drilled and controlled directionally so they would tap the sands at points roughly under their proper surface locations. After each completion the derrick and rig would be skidded a few feet and drilling begun on the next directional hole. A variant of this procedure was to drill two such slant wells from a single piling structure, and then connect the structure with a causeway to the next location where two more wells would be drilled directionally and the progression repeated until the limit of the lease was reached. The recovery from this particular field was great enough to warrant the more than usually elaborate drilling sites.

The operators of marine properties off the Gulf Coast however, will, in all probability, not have the advantage of such huge recoveries, and for that reason will be more than ever inclined to expend as little as possible on the development of the properties. The major portion of Gulf Coast operators have not been thrown in contact with the problems of marine development, and for this reason might overlook the economies to be derived from a plan of development based upon directional drilling.

The shape and size of the lease, as well as the spacing laws in effect for the particular field, are factors to be considered in the plan. In those fields like Elwood, where the offshore tracts are bounded by lines perpendicular to the coast, the resulting areas are often wedge-shaped and require a different spacing plan from one that is more nearly rectangular. In this discussion the Flour Bluff district of Nueces County will be used as an example. In this case the surveys have been extended from land as shown in Figure 1, and result in fairly uniform areas, which will in turn permit fairly uniform spacing.

Before going into the several plans of development, a better understanding of the problem can be gained from an examination of the conditions prevailing on the grounds. Listed at random, with no pretention to completeness, they are:

1. Comparatively sheltered position behind Padre and Mustang Islands.

2. Shallow water from 1 to 3 feet in depth over nearly the whole of the potential productive area.

3. Shifting sand floor ill adapted to maintaining dredged channels.

4. Fish and oyster grounds which strong local interests demand must be kept unpolluted and uncontaminated by waste oils, drilling mud and other refuse incident to drilling or producing.

5. Considered navigable waters by War Department and as such will probably be subject to strict requirements for strength and permanency in any construction approved.

6. In path of Gulf storms which have done considerable damage to marine structures in the past.

7. Divided ownership of off shore leases.

8. Spacing programs of one well to 20 acres.

9. No limiting vertical angle.

10. Reserve mud pits must be on shore and excess mud pipelined from location.

11. Possible concrete wall 14 feet high surrounding every drilling operation.

12. Production at 6,400 feet.

13. Special hearings necessary to permit multiple hole locations because of existing spacing laws.

For the purpose of discussion let us take the lease shown in Figure 2 which embraces approximately 160 acres. Under the existing spacing law of one well in the center of every 20 acres it can be safely assumed that the eight locations would fall approximately as indicated. These eight wells can be drilled upon any one of the following plans entirely or in combination:

1. Erecting separate piling drill site over each location and connecting each with a common roadway as shown in Figure 2. From each location a vertical well is drilled.

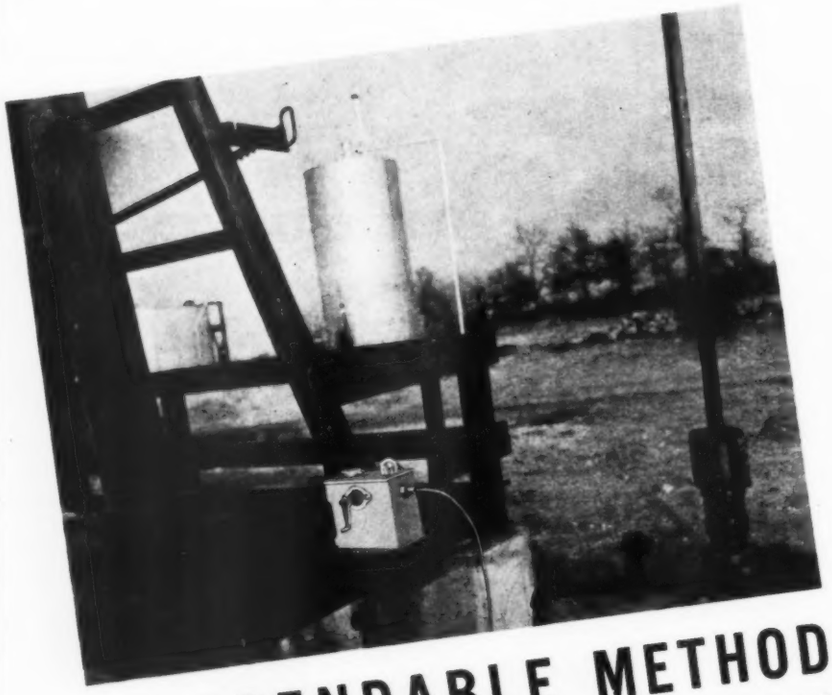
2. Erecting a special piling structure midway between every two locations from which the first well can be drilled directionally to bottom upon the sand under its proper surface location, completed, and the entire rig skidded some 10 feet to permit the deviated drilling of the twin well. Each structure being connected with a roadway as shown in plan in Figure 3.

3. Erecting a central island structure from which all wells may be drilled directionally as shown in plan in Figure 4, and in perspective in Figure 9. The island will be reached by a roadway from shore.

4. Using a drilling barge and drilling a single vertical hole at each location.

5. Rigging up on shore on a surface easement and controlling the first water offset wells so as to bottom under their proper surface location, and drilling the remainder of the wells by any of the above plans.

Let us examine the practicality of each of the proposed methods in the light of convenience, conformity with regulations, and expenditure. Under the first condition a separate set of piling must



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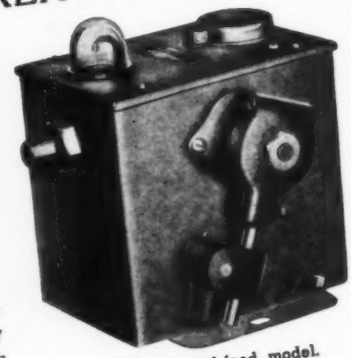

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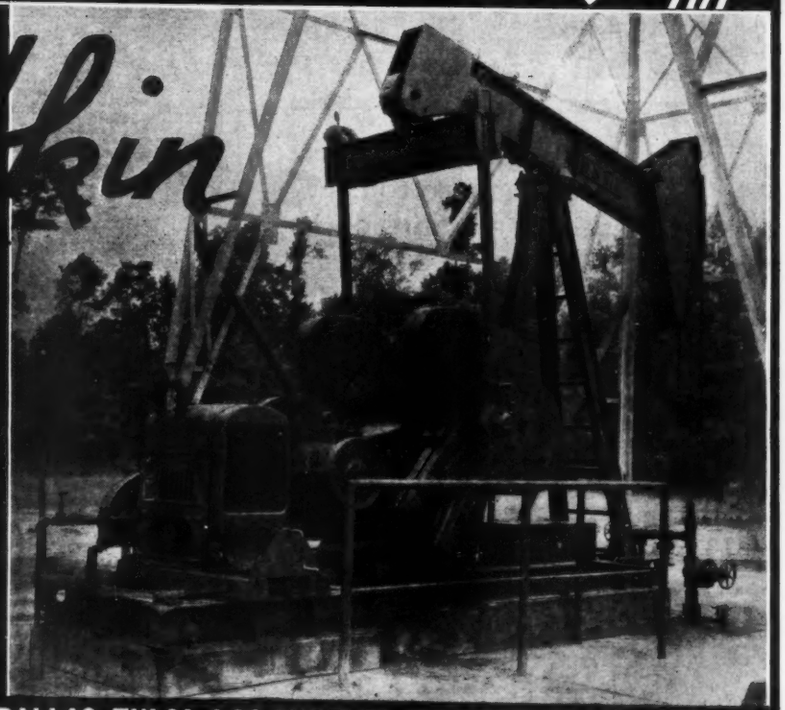

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The Following Table Summarizes ROLAGRIP Advantages For Tank Connections

As Compared to Flanges	*As Compared to Grooved Types*	*As Compared to Other High Pressure Plain End Types*
1 Rolagrip's first cost is much lower.	**1** Rolagrip's first cost is slightly higher.	**1** Rolagrip's first cost is lower.
2 No previous cutting or threading of pipe necessary with Rolagrip.	***However . . .*** **2** Rolagrip eliminates expensive pre-cutting and grooving of pipe; all necessary cutting can be done on the job with Rolagrip.	**2** Rolagrip insures a more dependable grip on pipe.
3 Pipe can be several degrees off alignment with Rolagrip.	**3** Saving of time and labor much more than offsets slight difference in first cost.	**3** Rolagrip's free action takes care of contraction and expansion.
4 Only two bolts to tighten on the Rolagrip—hence, quicker work and more joints per hour.		**4** Rolagrip's line contact insures against sticking or freezing as a result of rusting.

These Advantages Mean An Actual Saving of Time And Money

be driven, capped and floored to accommodate a substructure, derrick, drilling rig and accessories. If the expense and trouble of water transportation are to be avoided these sites must be connected with a suitable roadway which can be built of piling and runners as shown in Figure 5, or by filling in behind sheet piling bulkheads as indicated in Figure 6. In order that the development might continue with a minimum of delay it would be necessary for the next location to be ready and with a roadway already built to accommodate the movement of the drilling machinery. Upon completion of the first well the rig must be torn down, moved, and rigged up again on the next location. Without going into great detail and in the absence of actual figures, we shall take the averaged estimates of several reputable contractors to arrive at the approximate cost of development under this plan, or rather the cost of preparing the eight locations for drilling:

Cost of eight individual piling locations following typical layout illustrated in Figure 8, including pipe rack, pump platform, engine foundation, etc., capped and timbered to receive substructure	$20,000
Cost of 4,770 lineal feet of creosoted timber and piling trestlework roadway as illustrated in Figure 5, including turnarounds	95,400
Total	$115,400

Note: Does not include mud pits which in all probability will be steel tank sections which can be floated from location to location.

It is debatable which of the two types of roadway can be said to be the best. If cost is to be a criterion then the bulkhead type will be extensively used because it is approximately half the cost of the trestle type. The estimate revised to this alternative then becomes:

Cost of eight individual piling locations following typical layout illustrated in Figure 8, including pipe rack, pump platform, engine foundation, etc., capped and timbered to receive substructure	$20,000
Cost of 4,770 lineal feet of Wakefield bulkheading as illustrated in Figure 6, including fill	47,700
Total	$67,700

The outcome of Representative Ragalin Jones' bill, recently introduced in the Texas legislature, will have a pronounced effect upon the costs of preparing any location for drilling.

This bill provides that "the drilling or development of any oil or gas well, or the production of oil or gas, from any island, reef, marsh, salt water, lakes, bays, or that portion of the Gulf of Mexico within the jurisdiction of Texas, or in any fresh water lake or stream in this state, shall be done in such way and manner as to prevent such pollution of the water as will destroy or injure fish, oysters or shrimp.

"Provided, that hereafter no oil or gas well shall be drilled, developed, or operated in any of the salt waters or salt water marshes of this state, unless such well is first enclosed by a solid reinforced concrete wall. Such concrete wall shall not be less than 18 inches in thickness at the bottom, and if tapered to the top shall be not less than 10 inches in thickness at the top; such concrete wall shall be circular in shape and shall be built to enclose all the area needed for the drilling, development or operation of any such well; and such concrete wall shall be built so as to extend not less than 14 feet above the top of the water at mean tide.

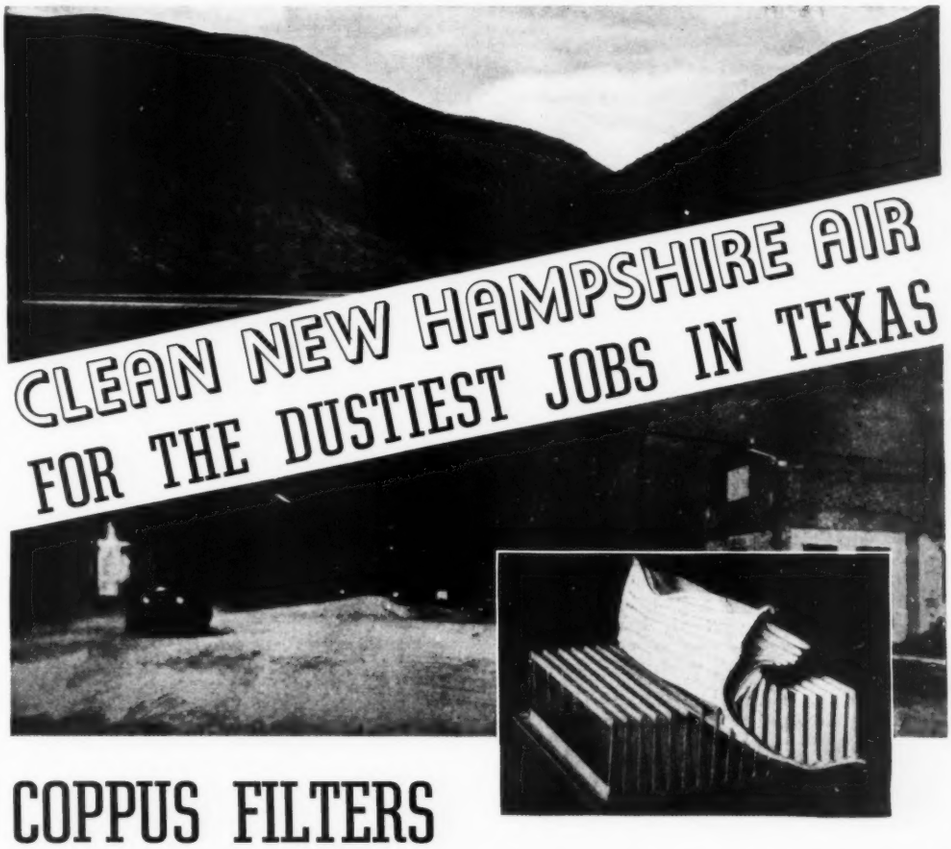
"The Game, Fish and Oyster Commission shall have the authority and it shall be their duty to make such rules and regulations for the drilling and development and operation of oil and gas wells in the areas mentioned in Section 1 of this act as will prevent pollution and destruction of edible aquatic animal life."

Whether this concrete wall shall be in the form of a caisson surrounding the casing and hole proper, or whether it shall enclose the entire area occupied by the drilling rig, pipe racks, mud tanks, etc., is not yet clearly defined. The writer is inclined to favor the latter interpretation, and in which event, if the bill is passed, will skyrocket the costs of marine development under any plan. The threat remains, however, and in weighing the advantages of the different plans, it had best be kept in mind.

The second plan calls for the erection of one central piling structure between every two locations as indicated in Figure 3. These need not be of elaborate design; it is necessary only to add sufficient pilings to the unit layout, to permit the shifting of the entire drilling assembly a distance of perhaps 10 feet. The distance will vary in practice according to the well head plan, space needed for blowout preventer installation and operation, and plans for future lifting of the oil after wells pass the flowing stage. Ten feet should satisfy the minimum requirements, therefore the following estimate has been made on that basis:

Cost of four piling structures adapted to permit skidding of entire rig a distance of 10 feet	$13,000	$13,000
Cost of 4,100 lineal feet of creosoted timber and piling trestlework roadway as illustrated in Figure 5	82,000	
Cost of 4,100 lineal feet of Wakefield bulkheading as illustrated in Figure 6, including fill		41,000
Total	$95,000	$54,000

In this case we will assume that for regulatory reasons that might arise before a plan of this type could be put into execution the angle of deviation must not be more than 5 degrees. Under this restriction deflection would begin at a depth of 2,550 feet, after surface casing had been set, and by setting removable whipstocks at the rate of two per 100 feet the required 5 degrees could be obtained in the first 125 or 150 feet, making an easy gradient



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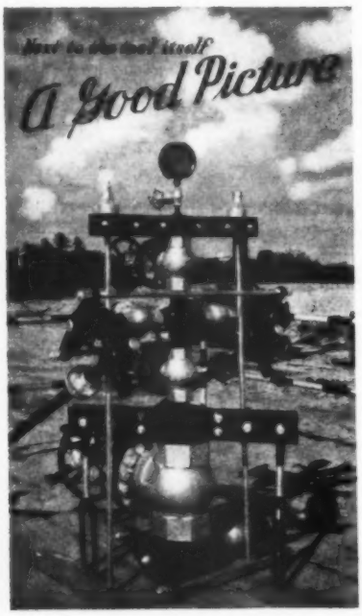

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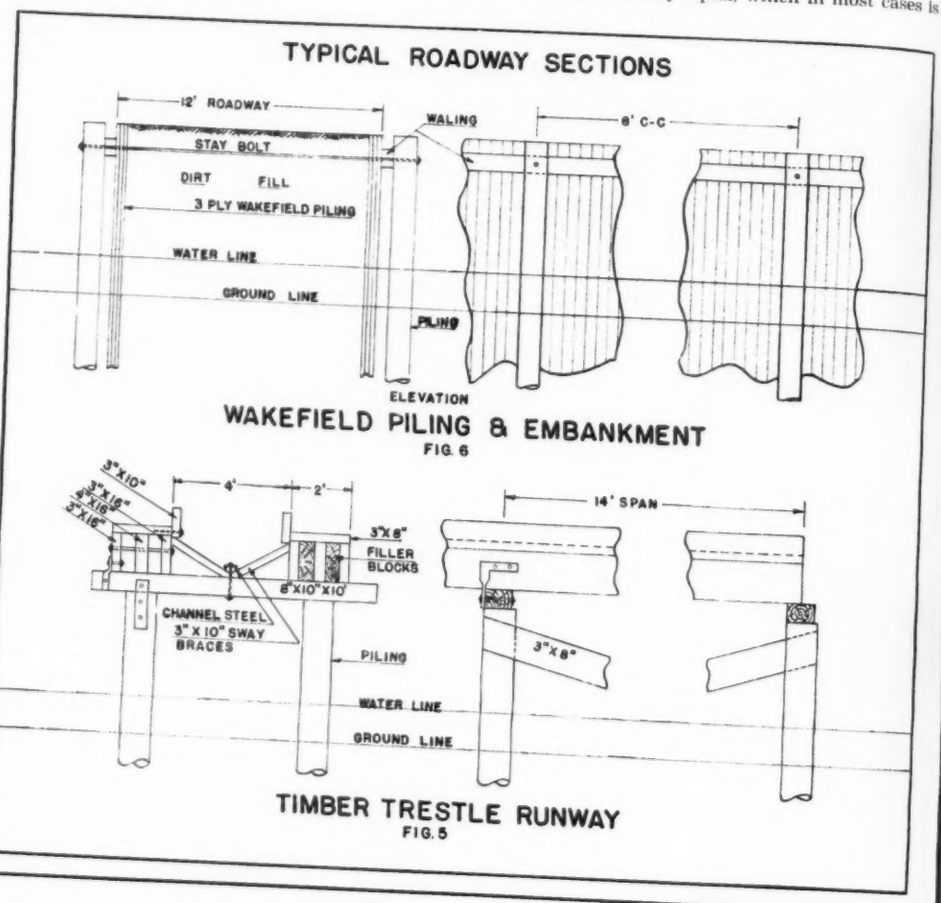
and one not likely to cause any troubles. Estimating that an average of 200 feet per day could be made under directional drilling methods it would require a total of 19 days to reach the 6,400-foot level and obtain the 325-foot deflection. The estimate of directional drilling costs is as follows:

One Well

Removable whipstocks for angle 3	$375
Removable whipstocks for direction 2	200
Service charge, 19 days at $25 day	475
Rental inside single shot instrument	180
Rental special bits	200
Contingencies, 10 per cent	$1,430 143
Total for one well	$1,573
Total for eight wells	$12,584

Cost per foot = 12,584 ÷ 51,317 = $.245+.

Assuming for comparative purposes that drilling rates under normal and directional drilling remain approximately equal, which in most cases is



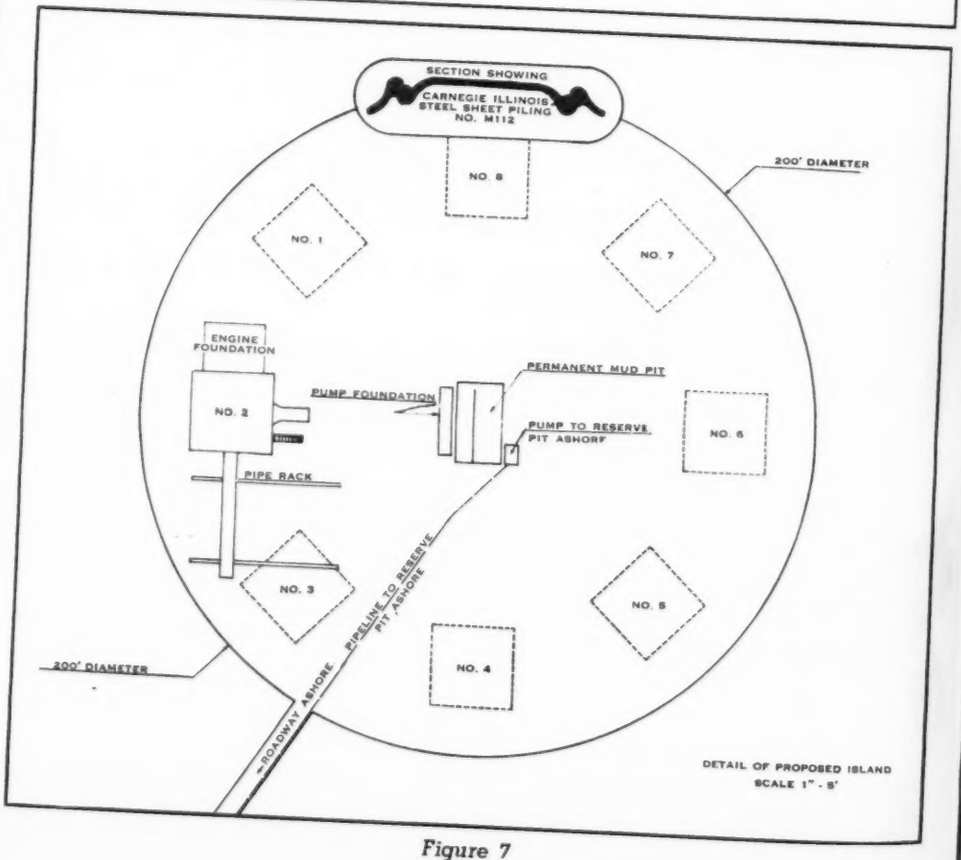
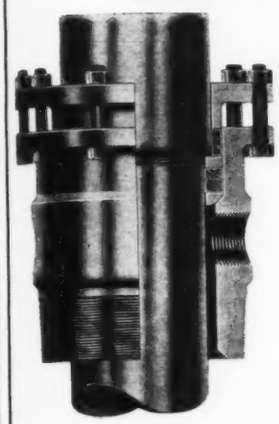


Figure 7

Orders Roll In

OTHER GULFCO CASING HEADS

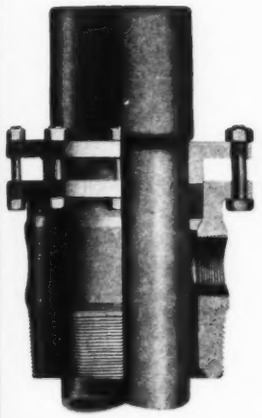


GULFCO FORGED STEEL REPACKABLE CASING HEADS AND BRADEN HEADS

TYPE A—2000 lbs., 4000 lbs., 6000 lbs. test pressures. Male or female threads.

High pressure asbestos packing.

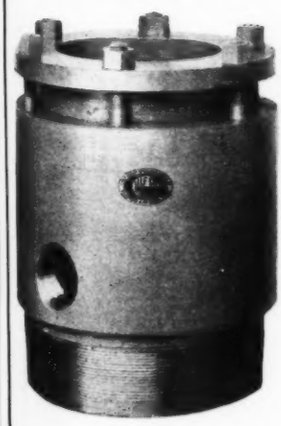
Lower packing acts as seal-off while changing the upper packing.



GULFCO LOUISIANA PATTERN, FORGED STEEL CASING HEADS

TYPE B—1500 to 3000 lbs. and 3500 to 6000 lbs. test pressures.

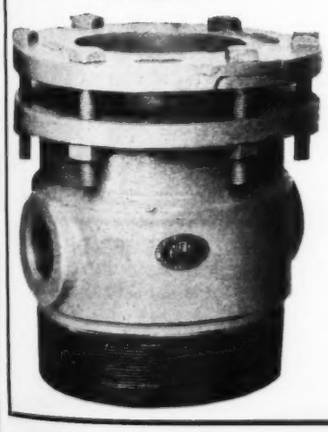
Flax or high pressure asbestos packing optional.



GULFCO FORGED STEEL BRADEN HEADS

TYPE C—1500 to 3000 lbs. and 3500 to 6000 lbs. test pressures. Male or female threads.

Same as Louisiana pattern except body forged without a flange and studs are used instead of machine bolts.



GULFCO SEMI-STEEL CASING HEADS

TYPE D—1000 lbs. test pressure. Male or female threads.

Construction similar to forged steel Louisiana pattern.

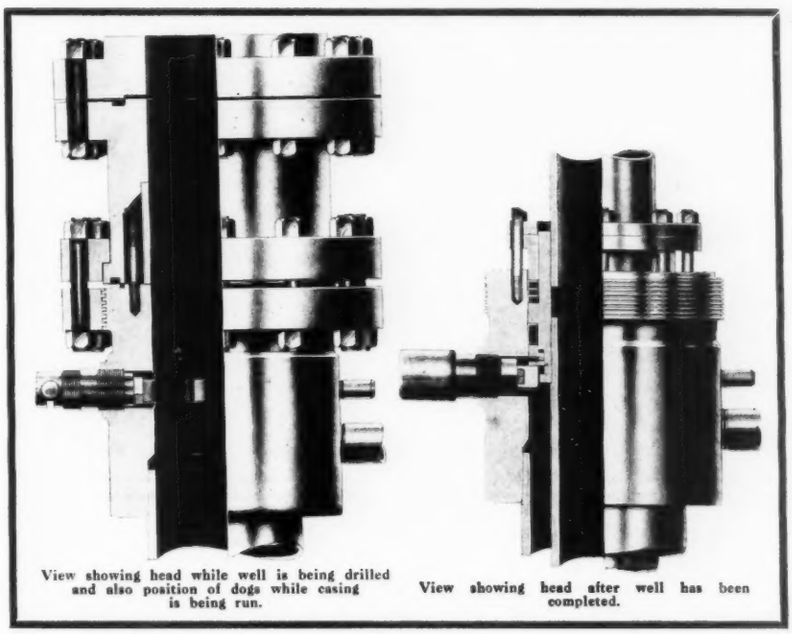
for the New GULFCO

TRUE FULL-HOLE RETRACTABLE SEAT

CASING HEAD

TYPE "J"

"The greatest advance in casing heads in a decade."



View showing head while well is being drilled and also position of dogs while casing is being run.

View showing head after well has been completed.

FULL OPENING: Head provides full opening the same I.D. as I.D. of casing used, permitting any tool that can be used in the casing to be run through the head without the necessity of making any changes of equipment on the head.

Permits the setting of casing at any point in the well as the suspension can be raised or lowered through head as desired.

Not necessary to use blowout preventer of larger size or to rebore to larger size to take care of suspension.

BY SIMPLY MAKING A HALF TURN OF A SMALL LEVER the Retractable Seat, which normally remains withdrawn into housing in the inner wall of head, is easily advanced to a position for supporting the inner casing. The dogs of seat form practically a solid, uniform supporting ring of enormous strength. *In a test in the presence of engineers of major oil companies, seat withstood a load of 630,000 pounds.*

EASY TO STRETCH CASING AFTER CEMENTING by simply pulling up until flange coupling is above retracted hanger which is then expanded to allow flange of coupling to rest upon it.

SAVES 10 TO 15 HOURS TIME

Crew does not have to remove blowout preventer before casing can be set. The Gulfco head is on the well at all times, ready for instant use, a feature that may frequently save the entire investment in the well.

SAVING MONEY AND SAVING WELLS FOR LEADING COMPANIES—IS THE REASON THE ORDERS ROLL IN

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18 years manufacturing high grade forged steel oil field equipment

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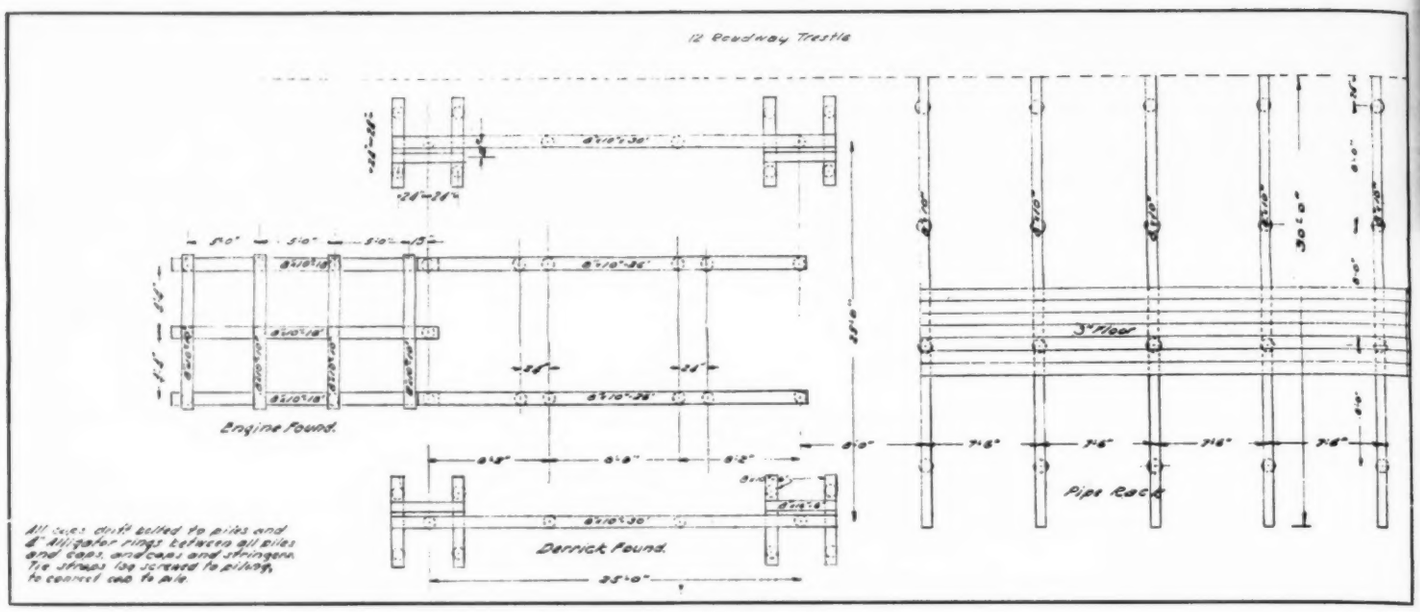


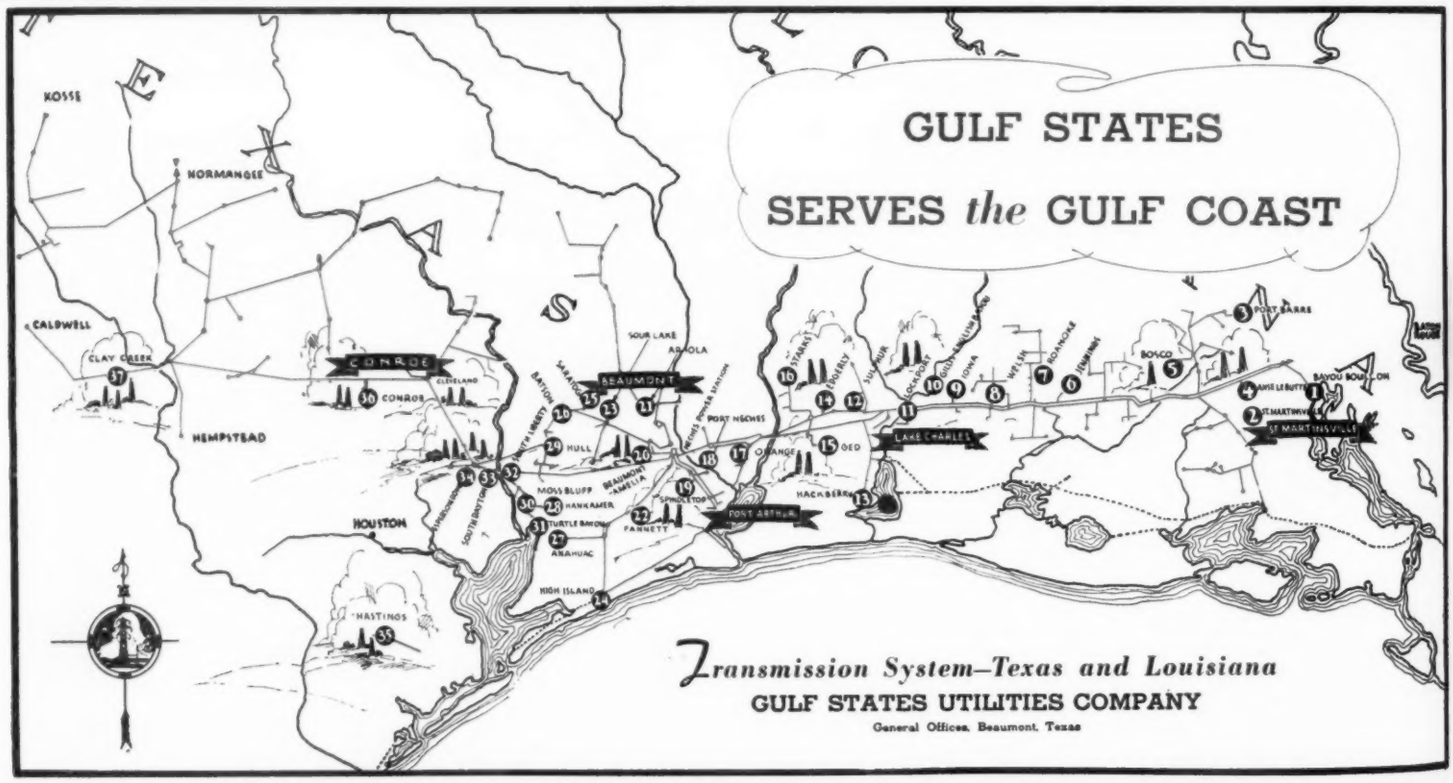
Figure 8

true because of the greater weight carried on the bit when drilling directionally, and excluding everything but construction and directional drilling costs, the totals under Plans 1 and 2 are:

	Plan 1			
	Trestle road		Bulkhead road	
Construction costs	$115,400		$67,700	
Deflecting costs				
		$115,400		$67,700
	Plan 2			
Construction costs	$95,000		$54,000	
Deflecting costs	12,584	$107,584	12,584	$66,584
Difference favoring Plan 2		$7,816		$1,116

This comparison shows a rather substantial saving from a plan employing directional drilling, if the trestlework roadway is used, and a rather negligible saving if the alternative is used. In the case of the bulkhead road alternatives good judgment would demand that Plan 1 be followed.

However, there is another slant to the problem. Let us assume that there will be no angular restrictions and that in special hearing special permits will be granted for two well locations if sufficient good cause can be shown. We can then arrange the locations as shown in Figure 3-A, from which one well can be drilled vertically and the other deviated at an average angle of 10 degrees a distance of approximately 650 feet to bottom up under its proper surface location. This plan also permits a substantial reduction in necessary roadway and therefore a reduction in construction costs over Plan 2 as outlined. In this plan the first hole drilled off shore can be drilled vertically, and if productive the rig can be skidded the necessary 10 feet and drilling begun on the deviated hole, during which time the roadway can be built to the next location. Under



COMPLETE ELECTRIC SERVICE IS MADE AVAILABLE BY GULF STATES UTILITIES COMPANY IN THIRTY-SEVEN OIL FIELDS

FIELDS THAT HAVE BEEN SERVED FOR FIVE YEARS OR LONGER

1 Bayou Bouillon	12 Sulphur	17 Orange	24 High Island	30 Moss Bluff	2* St. Martinsville	20* Beaumont-Amelia
3 Port Barre	13 Hackberry	18 Port Neches	25 Saratoga	32 South Liberty	5 Bosco	21* Arriola
4 Anse Le Butte	14 Edgerly	19 Spindletop	26 Batson	33 South Dayton	7 Roanoke	27 Anahuac
6 Jennings	15 Ged	22 Fannett	28 Hankamer	34 Esperson Dome	9 Iowa	31* Turtle Bayou
8 Welsh	16 Starks	23 Sour Lake	29 Hull	35 Hastings	10 Gillis-English Bayou	36 Conroe
11 Lockport				37 Clay Creek		

RECENT DEVELOPMENT WHERE SERVICE IS AVAILABLE

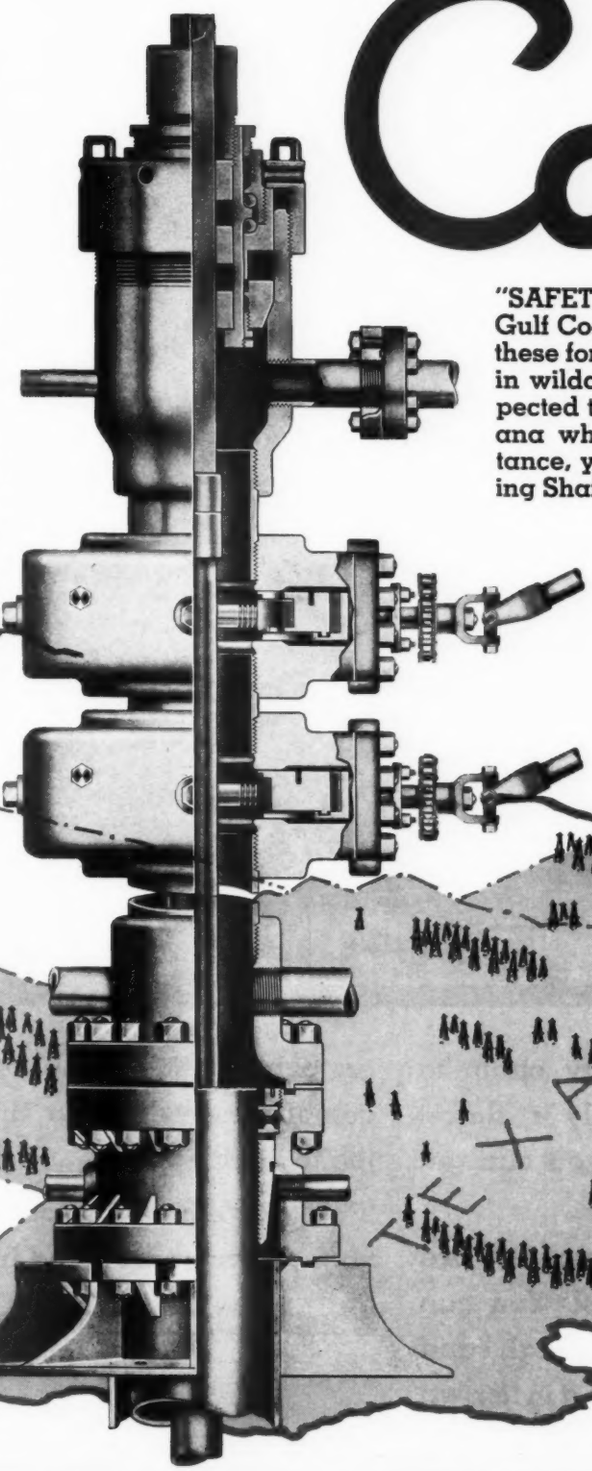
*Service within short distance.

The GULF COAST REALIZES THE IMPORTANCE OF

A *Typical* SHAFFER HOOK-UP

The modern hook-up illustrated provides for every need, including Drilling with Mud Control or Drilling Under Pressure with either Mud or Oil, using Standard, External Upset or Flush Joint Drill Pipe, and is easily converted into a Production Control Hook-up that will insure complete safety for future tubing operations.

At bottom, a Shaffer Landing Base; a Shaffer Spool Type Landing Head; Shaffer High Pressure Mud Cross with outlets for mud line connections; two Shaffer Cellar Control Gates—one a Master Gate for protection when the pipe is out of the hole, and one for protection with pipe in the hole—and a Shaffer Rotating Blow-out Preventer which insures protection under any contingency while making hole. Specifications and illustrations start on Page 1549 of the 1937 Composite Catalog; and are also in the Shaffer Catalog which we will be glad to send you upon request.

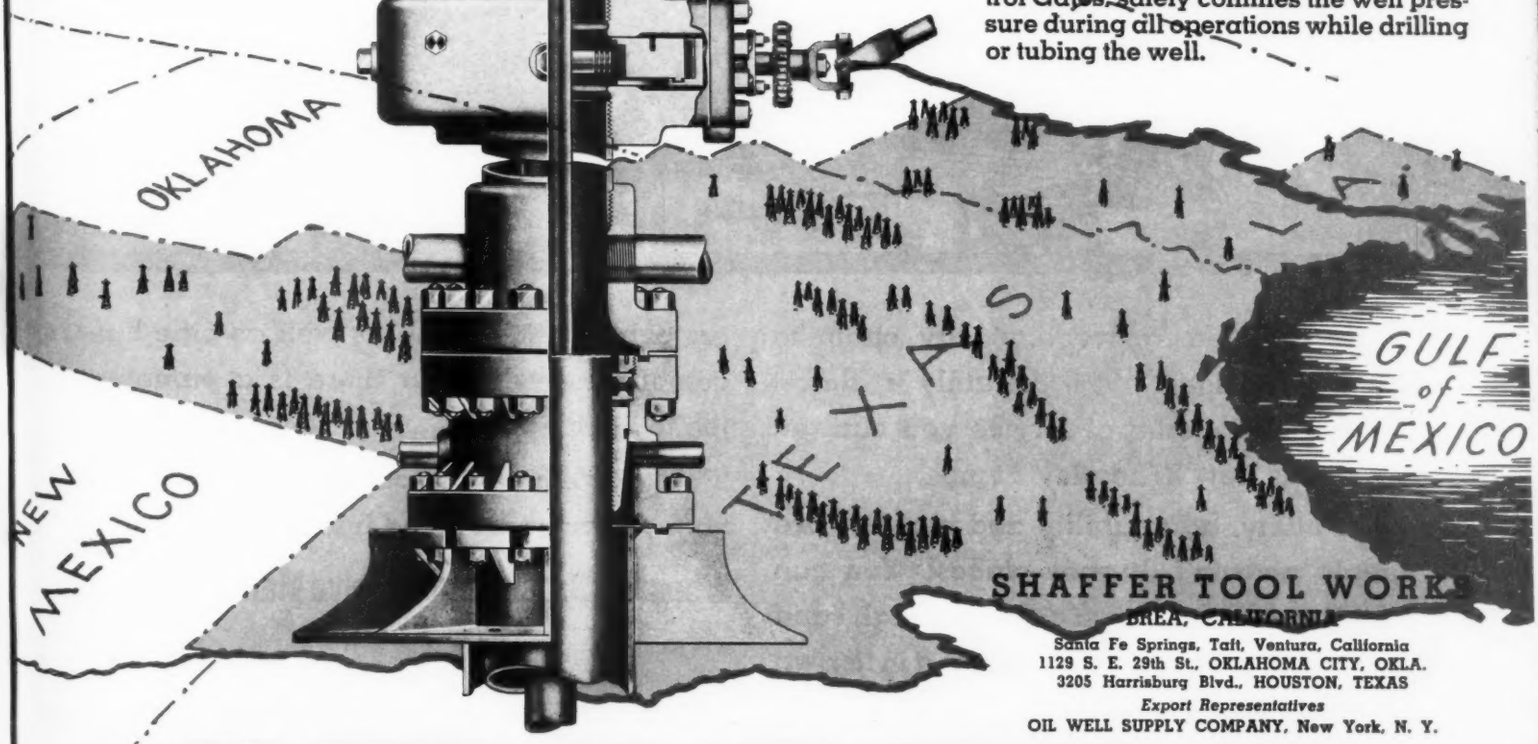


Control

THE ever-increasing use of SHAFFER "SAFETY FIRST" CONTROL EQUIPMENT in the Gulf Coast is positive evidence of the alertness of these forward-looking operators. Whether drilling in wildcat territory where the "unexpected is expected to happen" or in the bayou area of Louisiana where "cellar overhead" is of vital importance, you will find Gulf Coast operators specifying Shaffer "Safety First" Control Equipment.

SOMETHING NEW

Write today for details of an important improvement in Shaffer Equipment for drilling under pressure with Shaffer Improved Rotating Blow-out Preventer and Drill Pipe Stripper Assembly which, in combination with Shaffer Cellar Control Gates, safely confines the well pressure during all operations while drilling or tubing the well.



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No, gentlemen, we don't lay claim to being magicians, but it certainly is almost magic, the amount of service you can get out of this new Wheatley Pump.

Its utility, adaptability and mobility are simply amazin'! It goes places! You can take it up hill and down dale—through sand and rough country. You can turn it in its own length.

All this means that producers and refiners can use this pump as well as pipe line companies—wherever there is a pumping job to be done.

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WHEATLEY *Portable Self-Propelling* PUMP

these changed conditions the comparison offered above can be altered as follows:

	Trestle road		Bulkhead road	
Plan 1				
Construction costs	$115,400		$67,700	
Deflecting costs	.....		.....	
		$115,400		$67,700
Plan 2-A				
Construction costs	$81,800		$47,400	
Deflecting costs	8,800	$90,600	8,800	$56,200
Difference favoring Plan 2-A		$24,800		$11,500

The plan of using directional drilling now looks a great deal more attractive in the light of increased savings indicated. In the two-well location plan it is seen that not only are the costs of four additional locations practically eliminated, but four locations actually are eliminated, which at once greatly reduces the area to be affected by possible pollution and at the same time presents one-half the hazard and inconvenience to local navigation.

To the writer, and to the many individuals with whom the matter has been discussed, the cleanest-cut approach to the problem, and the one promising the greatest number of advantages, including substantial economy, is the third plan of constructing

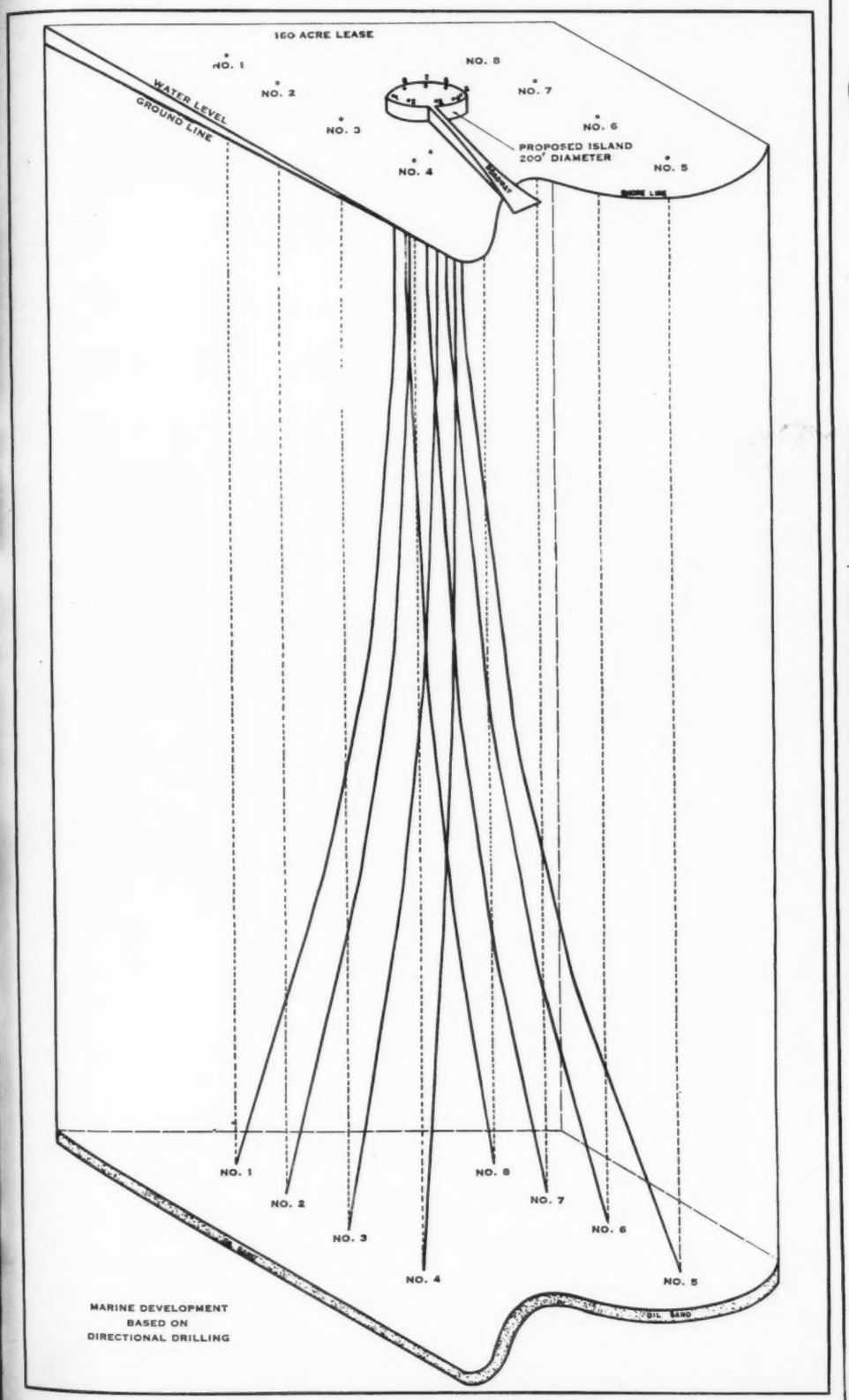

Figure 9

Consult your leading oil field distributor today and learn the advantages derived from using "XL" couplings. Our special patented process for recessing means concentricity of recess in combination with threaded section of coupling, thus assuring accuracy in alignment of joints.

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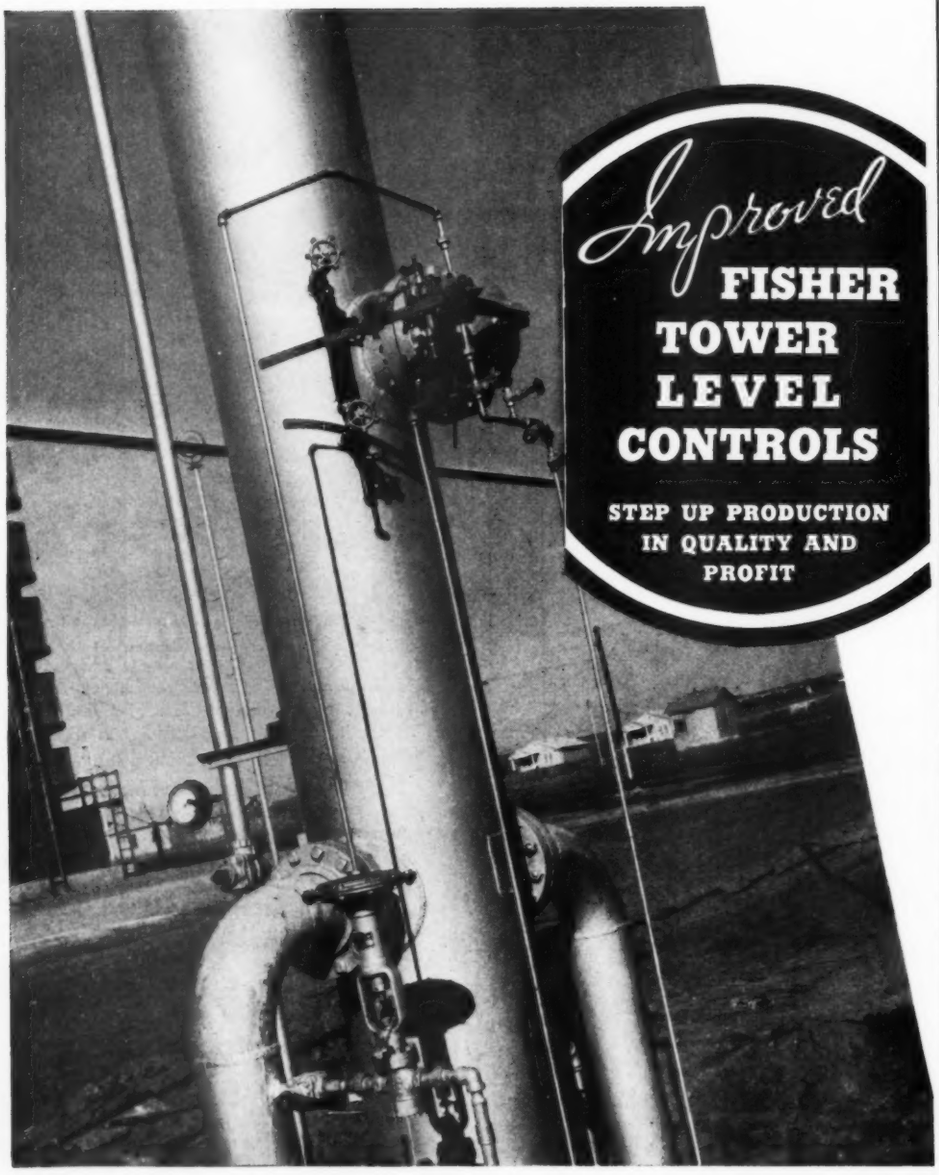


FISHER

Brine Tower Control

The FISHER Type 234-C Internal Float Pilot Operated Level Control shown on the installation above, is operating on a small diameter brine tower controlling the level by operation of the diaphragm motor control valve shown in the lower foreground. This installation is made at one of the new and modern gasoline plants recently built in the Mid-Continent Field.

Are your process towers suffering from flood and drouth, where a constant level control is important? Badly fluctuating levels can upset your entire process cycle, cutting production and profit, and even leading to complete shut-down.

Protect your plant against such failures with the new and improved FISHER Pilot Operated Level Controllers, which give you guaranteed full throttling control because they are correctly engineered, accurately sized, and each control is built and tested individually and specifically for the job on which it is to operate.

These controls are available for all pressures and temperatures with either the internal float type, as illustrated above, or the external float cage type. There is also a complete line of non-pilot, direct operating FISHER Level Regulators where such controlls are desired. FISHER engineers will gladly analyze your problems and recommend the correct size and type of control equipment.

For further details write for Bulletin 36-B.

MARSHALLTOWN FISHER IOWA U. S. A.

Fisher Governor Company

REPRESENTATIVES IN ALL PRINCIPAL CITIES

a sturdy central island connected to shore with a single roadway, and from which island every well can be deviated gently to bottom up under its particular approved surface location. Figure 4 shows the plan of the lease under this arrangement and the distances which the several wells must be deviated. An isometric drawing is shown in Figure 9 which will aid in the visualization of the scope of the project, as well as show the obvious cleanness of such a plan of development.

As shown in Figure 7, the island can be built by enclosing a 200-foot diameter circle by steel interlocking sheet piling of the form indicated in the enlarged section, and filled either with wet dredgings from the floor of the bay or dry earth from ashore. This area will accommodate with ease the drilling of eight locations. After one location has been drilled it is only necessary to skid the rig some 50 feet to be over the second location. As shown in this illustration a central mud plant can be maintained which will serve every well without alteration and which will prove a great convenience. The excess mud will be pumped ashore through a pipe line laid on the road. Flow lines will also be carried by the roadway. By having the surface of the island sloping in to the center, a perfect drainage obtains which reduces chances of pollution to an absolute minimum. The one island possesses greater strength and a greater resistance to damaging seas and winds than any other type of construction. Its permanency could be even further secured by laying flat stone over the surface to prevent erosion from possible high wave action. Such a plan of development would seem to possess all the advantages, and few of the disadvantages and would come nearer to satisfying the requirements of the fish and oyster people, as well as those concerned with the navigability of the waters.

The cost of building this island and roadway together with the costs of deflecting the wells is approximated as follows:

	Trestle road	Bulkhead road
9,324 sq. ft. steel sheet piling in place including fill	$13,800	$13,800
950 lineal feet trestle work roadway illustrated in Figure 5	19,000	
950 lineal feet bulk roadway illustrated in Figure 6		9,500
Total construction cost	$32,800	$23,300
Total deflecting cost	20,300	20,300
Total construction and deflection costs	$53,100	$43,600
Savings in this plan over Plan 1	$62,300	$24,100

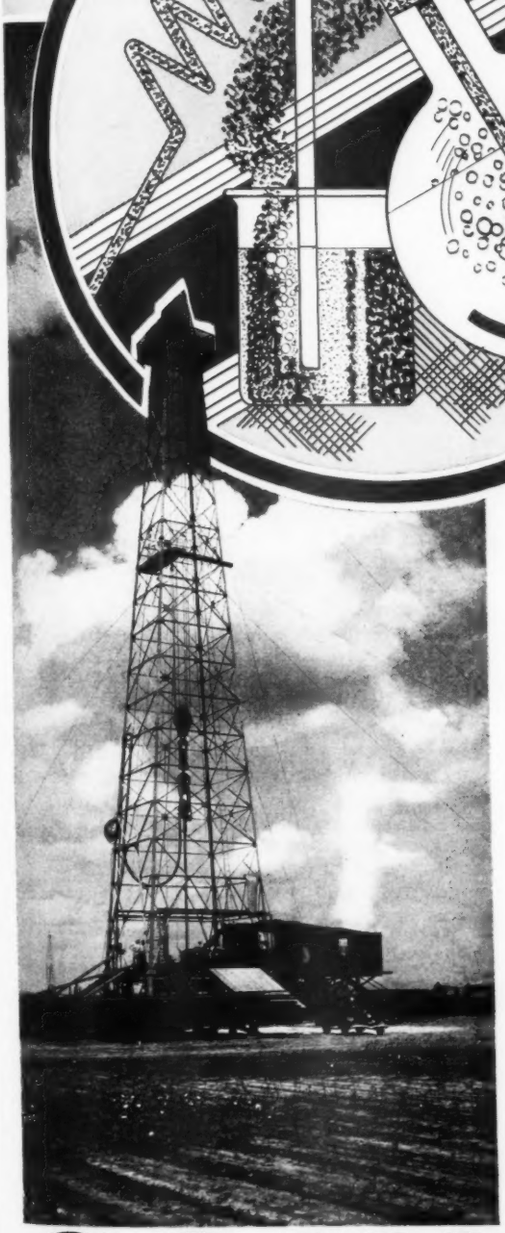
The following summary will assist in the comparison of the costs under all four of the plans already discussed. It is unlikely, for many obvious reasons, that drilling barges will do this work, or that any of the first line of wells will be deviated from a shore location, and for this reason estimates of these alternatives need not enter into the picture.

	Trestle road	Bulkhead road
Plan 1	$115,400	$67,700
Plan 2	107,584	66,584
Plan 2-A	90,600	56,200
Plan 3	53,100	43,600

While we have considered nothing but construction and deflecting costs, assuming that under any conditions the remaining factors will be more or less the same, with the possible exception of costs of tearing down, moving and rigging up, the above comparison is sufficiently accurate to uphold the conclusion that directional drilling methods may be used at a great saving and added convenience over conventional methods used ashore.

Porter Regenold, Plaza Hotel, Corpus Christi, Tex., has completed a combination map covering land and lease ownership of field and wildcat drilling in Refugio, Aransas, San Patricio, Nueces, Bee, Live Oak, McMullen, Duval, Jim Wells, Brooks, Kleberg, Kenedy and parts of Webb, Jim Hogg and Goliad counties, South Texas.

Muriatic ACID



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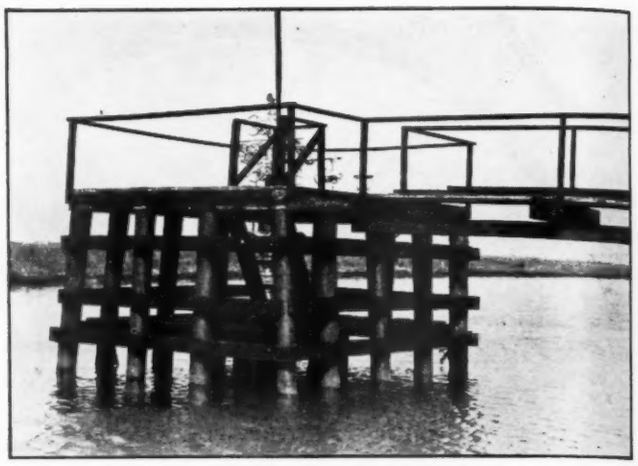
Exploration for Oil Is Carried Steadily Deeper on Gulf Coast

By NEIL WILLIAMS



In the Lafitte field

Exploration for petroleum reserves on the Gulf Coast is being carried steadily deeper, and, as successively lower levels are reached, development at these depths becomes more widespread. In turn, depths of 4,000 feet, 5,000 feet, 6,000 feet, and now even 7,000 feet have become looked upon as shallow with operators thinking in terms of 8,000-foot, 9,000-foot, and deeper holes. In modern exploration, Gulf Coast operators start few wildcat tests without expecting to go to at least 8,000 feet.

Unusually thick deposition of sedimentary formations underlying the Gulf Coast region offer almost unlimited potentialities for exploration at increasingly lower levels. With the advancement in drilling technique and equipment, and need for reserves, the way is opened for continued deeper drilling. Although deep drilling or deep production records are not held in this district, these records are closely approached, and the aggregate of deep drilling is on a much greater scale than elsewhere.

In recent months there has been witnessed the drilling of two tests to below 12,000 feet, and the opening of commercial production below 10,000 feet at two widely separated fields. The 12,000-foot tests are Continental Oil Co. No. 1 Hebert, on the Abbeyville Prospect, Vermilion Parish, Louisiana, and Stanolind Oil & Gas Co. No. 1 Stoval, on the South Abbeyville Prospect, in the same parish. the 10,000-foot production is at Lafitte, Jefferson Parish, Louisiana, and at Old Ocean, Brazoria County, Texas.

At a total depth of 12,216 feet, Continental Oil Co. test at Abbeyville is the second deepest hole in the world, being second only to Gulf Oil Corp. No. 103 McElroy, Upton County, West Texas, which went to 12,786 feet. Continental Oil Co. encountered high gas pressures and showings in its deep test that gave promise of making a producer, which would have been the deepest production in the world, but mechanical difficulties prevented completion. Since then the hole has been plugged to shallower sands, in which attempts are being made by casing perforations to complete as a producer.

Stanolind Oil & Gas Co. deep test, approximately 14 miles from the Continental well, was drilled to 12,133 feet without incident, establishing itself as the third deepest test. Being dry at that depth with no favorable structural indications, it was abandoned in February. This test has the distinction of drilling the greatest amount of open hole on record. No casing was run below the 13⅜-inch surface casing at 1,980 feet.

Two producing wells have been completed below 10,000 feet at Lafitte, La., and one at Old Ocean, Tex., since January. The deepest is Harrison & Abercrombie No. 3 Bernard at Old Ocean. This well, brought in during March, was drilled to 10,427 feet, although the producing depth is 10,303 feet. This lacks 266 feet of equaling the depth of the world's producer, Tide Water Associated Oil Co. No. 12 McGonigle, in the Ventura Avenue field, California, completed at a total depth of 10,569 feet.

Lafitte's two 10,000-foot producers, Nos. 5 Rigolets and 1 Milling, were completed at 10,244 feet and 10,020 feet, respectively. The former was drilled to 10,942 feet, where drill pipe stuck. It was plugged back to 6,943 feet and redrilled to 10,244 feet, where casing was perforated at 9,950-10,035 feet. The Milling well was drilled to 10,040 feet, and perforated at 9,950-10,020 feet. Both are good wells.

Even prior to completion of these three 10,000-foot wells, Lafitte and Old Ocean were the deepest producing fields on the Gulf Coast. Original production at Lafitte was in sands at 9,400-9,600 feet, nine wells having been brought in between these depths. The discovery well, No. 1 Bayou St. Dennis, was completed in May, 1935, at a total depth of 9,572 feet. First production at Old Ocean was in an 8,600-8,700-foot sand, in which two wells were completed, the discovery well being brought in during November, 1934, at 8,651 feet. The third well at Old Ocean, completed in September, 1936, was brought in at a total depth of 9,963 feet, establishing a new deep producing record for the Gulf Coast. This record lasted only until October, 1936, when Texas Co. completed No. 5 Lafitte at Lafitte at a total

PRODUCING WELLS COMPLETED BELOW 8,000 FEET ON GULF COAST, BY FIELDS

Field—	County or parish *—	Below 10,000 ft.	9,500 to 10,000 ft.	9,000 to 9,500 ft.	8,000 to 9,000 ft.	Total below 8,000 ft.
Bay City	Matagorda (T)	0	0	1	0	1
Belle Cocotriz	Terrebonne (L)	0	0	1	0	1
Bosco	Acadia and St. Landry (L)	0	0	3	46	49
Dickinson	Galveston (T)	0	0	7	58	65
Greens Bayou	Harris (T)	0	0	0	1	1
Labelle	Jefferson (T)	0	0	0	1	1
Lafitte	Jefferson (L)	2	6	4	0	12
Old Ocean	Brazoria (T)	1	1	0	2	4
Roanoke	Jeff Davis (L)	0	0	0	22	22
Seabreeze	Chambers (T)	0	0	0	3	3
Shepherds Mott	Matagorda (T)	0	0	0	1	1
South Jennings	Jeff Davis (L)	0	0	0	1	1
Tepetate	Acadia (L)	0	0	0	45	45
Van Vleck	Matagorda (T)	0	0	0	3	3
White Castle	Iberville (L)	0	0	0	1	1
Total		3	7	16	184	210

* (T) Texas; (L) Louisiana.

TESTS DRILLED ON GULF COAST BELOW 8,000 FEET, BY FIELDS

Field—	County or parish *—	Below 10,000 ft.	9,500 to 10,000 ft.	9,000 to 9,500 ft.	8,000 to 9,000 ft.	Total below 8,000 ft.
Bay City	Matagorda (T)	0	1	1	0	2
Belle Cocotriz	Terrebonne (L)	0	0	1	0	1
Big Lake	Cameron (L)	0	1	1	2	4
Bosco	Acadia and St. Landry (L)	1	0	5	51	57
Buckeye	Matagorda (T)	0	0	1	1	2
Cameron Meadows	Cameron (L)	0	0	1	0	1
Cankton	St. Landry (L)	0	0	1	1	2
Dickinson	Galveston (T)	0	0	14	56	70
Esperson	Liberty (T)	0	0	1	2	3
Gillis	Calcasieu (L)	0	0	2	4	6
Green Lake	Galveston (T)	0	1	0	0	1
Gueydan	Vermilion (L)	0	1	0	1	2
Iowa	Calcasieu and Jeff Davis (L)	0	0	1	0	1
Jeanerette	St. Mary's (L)	0	0	1	1	2
Labelle	Jefferson (T)	0	1	0	1	2
Lafitte	Jefferson (L)	2	7	4	0	13
Lake Barre	Terrebonne (L)	1	0	0	0	1
Nome	Jefferson (T)	0	0	1	0	1
Old Ocean	Brazoria (T)	1	1	0	2	4
Refugio	Refugio (T)	0	0	1	1	2
Roanoke	Jeff Davis (L)	2	2	4	23	31
Seabreeze	Chambers (T)	0	0	1	3	4
Shepherds Mott	Matagorda (T)	0	0	1	1	2
South Jennings	Jeff Davis (L)	0	1	1	0	2
Tepetate	Acadia (L)	0	0	2	49	51
Miscellaneous		11	10	16	94	131
Total		18	26	61	293	398

* (T) Texas; (L) Louisiana.

MAKE SURE *Now*... that you'll PROFIT later!

ULTIMATE casing costs may seem relatively unimportant on a new flowing well. But if the well goes on the pump in several years and other costs mount, additional casing expense may be enough to make a well unprofitable.

The best safeguard against increasing casing costs is the choice of uniform, dependable casing in the beginning. NATIONAL Seamless Casing is economical casing because it has the extra strength to meet emergencies that are sometimes encountered in running and cementing, thereby remaining sound and dependable; it stabs easily and screws together smoothly and accurately; it cannot split in a weld a mile or more down — *it has no welds;* and, no matter what the conditions, there is a particular type to suit every requirement — economically, too.

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W-K-M Company, Inc.
Byron Jackson Company
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Ohio Injector Company
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depth of 9,974 feet, just a few feet below the depth of the Old Ocean well.

Altogether there are six widely separated fields on the Gulf Coast with commercial production definitely established in sands below 9,000 feet. These represent a total of 25 wells, in each of which the daily potential production is of prolific importance. Wells below 9,000 feet which have made a small amount of oil are not included. In addition there are at least four other fields or areas in which existence of production in sands below 9,000 feet has been indicated either by blowouts or important showings at those depths.

One such area is the Abbeyville Prospect, in Vermilion Parish, where high gas pressure and

WELLS DRILLED ON GULF COAST BELOW 10,000 FEET

Company and well—	Field or area—	County or parish*—	Total depth	Completion depth	Status	Date completed
Continental Oil Co. No. 1 C. C. Herbert	Abbeyville	Vermilion (L)	12,216	7,675	Producing	Apr. 1937
Stanolind Oil & Gas Co. No. 1 Stoval	South Abbeyville	Vermilion (L)	12,133	.....	Abandoned	Feb. 1937
Humble Oil & Refining Co. No. 1 Ellender	Wildcat	Terrebonne (L)	11,384	.....	Active	.....
The Texas Co. No. 1 Horse Shoe Bayou	Wildcat	St. Mary (L)	10,975	.....	Active	.....
The Texas Co. No. 5 Rigolets	Lafitte	Jefferson (L)	10,942	10,035	Producing	Jan. 1937
The Texas Co. No. 37 State	Lake Barre	Terrebonne (L)	10,998	.....	Active	.....
Shell Petroleum Corp. No. 1 Jarnigan	Roanoke	Jeff Davis (L)	10,750	.....	Abandoned	Sept. 1935
The Texas Co. No. 1-B State	Vermilion Bay	Vermilion (L)	10,622	.....	Abandoned	Mar. 1937
Humble Oil & Refining Co. No. 1 Nelson Thomas	Roanoke	Jeff Davis (L)	10,583	.....	Abandoned	Oct. 1935
Shell Petroleum Corp. No. 1 Maco Stewart	Wildcat	Galveston (T)	10,460	5,147	Gas well	Feb. 1937
Harrison & Abercrombie No. 3 Bernard	Old Ocean	Brazoria (T)	10,427	10,303	Producing	Mar. 1937
Superior Oil Prod. Co. No. 1 Duplanter	Wildcat	East Baton Rouge (L)	10,360	.....	Abandoned	Oct. 1935
Humble Oil & Refining Co. No. 1 Continental	Wildcat	Terrebonne (L)	10,254	.....	Abandoned	Sept. 1936
Shell Petroleum Corp. No. 1 Realty	Wildcat	Terrebonne (L)	10,155	.....	Abandoned	Mar. 1936
Pure Oil Co. No. 1 State	Wildcat	Cameron (L)	10,146	.....	Abandoned	Apr. 1937
Beatty, Bowles & Borsodi No. 1 Frank Truska	Wildcat	Brazoria (T)	10,082	.....	Abandoned	Mar. 1937
The Texas Co. No. 1 Milling	Lafitte	Jefferson (L)	10,040	10,020	Producing	Jan. 1937
Superior Oil Prod. Co. No. 1-A Martinez	Bosco	St. Landry (L)	10,005	.....	Abandoned	Jan. 1935

* (L) Louisiana; (T) Texas.

WELLS DRILLED ON GULF COAST TO DEPTHS OF 9,500 FEET TO 10,000 FEET

Company and well—	Field or area—	County or parish*—	Total depth	Completion depth	Status	Date completed
The Texas Co. No. 6 Lafitte	Lafitte	Jefferson (L)	9,983	.....	Active	.....
The Texas Co. No. 5 Lafitte	Lafitte	Jefferson (L)	9,974	.....	Producing	Oct. 1936
Harrison & Abercrombie No. 1 Armstrong	Old Ocean	Brazoria (T)	9,963	.....	Producing	Sept. 1936
Stanolind Oil & Gas Co. No. 1 C. E. Britt	South Jennings	Jeff Davis (L)	9,944	8,659	Wet gas	Nov. 1936
Quintana Oil Co. No. 2-B O'Connor	Wildcat	Refugio (T)	9,923	.....	Abandoned	Apr. 1935
Humble Oil & Refining Co. No. 1 Jarnigan	Roanoke	Jeff Davis (L)	9,870	.....	Abandoned	Feb. 1935
Yount-Lee Oil Co. No. 1 E. W. Boyt	Wildcat	Liberty (T)	9,867	.....	Abandoned	Sept. 1933
Shell Petroleum Corp. No. 1 Lacassine	Wildcat	Jeff Davis (L)	9,844	8,664	Abandoned	July 1936
Sun Oil Co. No. 1 Herbert-Broussard	Labelle	Jefferson (T)	9,843	.....	Abandoned	Aug. 1936
Shell Petroleum Corp. No. 6 Kratzer	Roanoke	Jeff Davis (L)	9,843	8,881	Abandoned	Mar. 1937
Humble Oil & Refining Co. No. 2 Bell Estate	Wildcat	Allen (L)	9,833	.....	Abandoned	Sept. 1936
Shell Petroleum Corp. No. 1 Hefla Land Co.	Wildcat	St. Martins (L)	9,800	.....	Abandoned	Feb. 1937
The Texas Co. No. 6 St. Martins	Wildcat	St. Martins (L)	9,771	.....	Abandoned	Jan. 1935
Shell Petroleum Corp. No. 1 Sturdivant	Wildcat	Jeff Davis (L)	9,747	.....	Active	.....
Magnolia Petroleum Co. No. 1 E. Hebert Trust	Wildcat	Jefferson (T)	9,708	.....	Abandoned	Jan. 1934
The Texas Co. No. 2 Bayou St. Dennis	Lafitte	Jefferson (L)	9,640	.....	Producing	Sept. 1935
Sun Oil Co. No. 1 J. D. Hughes	Green Lake	Galveston (T)	9,636	3,636	Producing	Sept. 1936
The Texas Co. No. 2 Rigolets	Lafitte	Jefferson (L)	9,606	.....	Producing	Feb. 1936
Hammon Exploration Co. No. 1 J. H. Croker	Bay City	Matagorda (T)	9,575	8,194	Producing	Mar. 1937
The Texas Co. No. 1 Bayou St. Dennis	Lafitte	Jefferson (L)	9,572	.....	Producing	May 1935
The Texas Co. No. 1 Rigolets	Lafitte	Jefferson (L)	9,568	.....	Producing	Sept. 1935
The Texas Co. No. 3 Lafitte	Lafitte	Jefferson (L)	9,555	.....	Producing	Apr. 1936
Pure Oil Co. No. 6 Alliance	Gueydan	Vermilion (L)	9,545	.....	Abandoned	Feb. 1936
Humble Oil & Refining Co. No. 1-B Industrial	Wildcat	Calcasieu (L)	9,532	.....	Abandoned	Jan. 1935
Strake Petroleum Co. No. 1 G. T. Sargent	Wildcat	Matagorda (T)	9,503	.....	Abandoned	Mar. 1937
Magnolia Petroleum Co. No. 1 Broussard	Big Lake	Cameron (L)	9,501	7,968	Producing	Jan. 1936

* (L) Louisiana; (T) Texas.

WELLS DRILLED ON GULF COAST TO DEPTHS OF 9,000 FEET TO 9,500 FEET

Company and well—	Field or area—	County or parish*—	Total depth	Completion depth	Status	Date completed
Shell Petroleum Corp. No. 1-B Realty	Belle Cocotriz	Terrebonne (L)	9,493	.....	Producing	Feb. 1937
Magnolia Petroleum Co. No. 1 Homeseekers	Wildcat	Acadia (L)	9,465	.....	Abandoned	July 1936
Superior Oil Prod. Co. No. 1 Malancon	Bosco	Acadia (L)	9,455	8,620	Producing	Dec. 1934
The Texas Co. No. 3 Rigolets	Lafitte	Jefferson (L)	9,455	.....	Producing	Apr. 1936
United North & South Development Co. No. 2 Stoddard	Buckeye	Matagorda (T)	9,457	.....	Abandoned	June 1934
Hammon Exploration Co. No. 1 Cleveland	Bay City	Matagorda (T)	9,428	9,370	Producing	Mar. 1936
Superior Oil Prod. Co. No. 1 Marcellus Savoie	Cankton	St. Landry (L)	9,428	5,323	Producing	Jan. 1927
Humble Oil & Refining Co. No. 3 Devilbiss	Roanoke	Jeff Davis (L)	9,425	8,476	Producing	Apr. 1935
The Texas Co. No. 4 Lafitte	Lafitte	Jefferson (L)	9,420	.....	Producing	July 1936
Humble Oil & Refining Co. No. 1 Long Bell Lumber Co.	Wildcat	Beauregard (L)	9,413	.....	Abandoned	May 1934
The Texas Co. No. 4 Rigolets	Lafitte	Jefferson (L)	9,406	.....	Production	July 1936
Magnolia Petroleum Co. No. 1 Alvin Hebert	Big Lake	Cameron (L)	9,400	.....	Abandoned	Aug. 1936
Humble Oil & Refining Co. No. 2-B DeVilbiss	Roanoke	Jeff Davis (L)	9,396	7,817	Producting	June 1935
General Crude Oil Co. No. 1 W. C. Kay	Esperson	Liberty (T)	9,375	4,395	Abandoned	July 1935
Humble Oil & Refining Co. No. 1 Danielson	Dickinson	Galveston (T)	9,360	9,140	Producing	Apr. 1935
Yount-Lee Oil Co. No. 1 Plummer	Wildcat	Chambers (T)	9,334	.....	Abandoned	Jan. 1933
The Texas Co. No. 1 Miami Corp.	Cameron Meadows	Cameron (L)	9,331	4,004	Producing	Jan. 1935
Humble Oil & Refining Co. No. 1 American	Wildcat	Acadia (L)	9,308	.....	Abandoned	July 1935
Union Sulphur Co. No. 1 Emile Wurmost	Wildcat	Calcasieu (L)	9,259	.....	Abandoned	Sept. 1936
Union Sulphur Co. No. 2 Prairie Farm	Wildcat	Calcasieu (L)	9,250	.....	Abandoned	Mar. 1936
Fohs Oil Co. No. 1 Airhart	Gillis	Calcasieu (L)	9,246	7,084	Producing	Oct. 1935
Humble Oil & Refining Co. No. 1 A. H. and E. H. Schaper	Dickinson	Galveston (T)	9,234	.....	Abandoned	Apr. 1935
Pan American Producing Co. No. 1 Lutcher Moore	Wildcat	Cameron (L)	9,227	.....	Abandoned	Jan. 1936
Humble Oil & Refining Co. No. 4 DeVilbiss	Roanoke	Jeff Davis (L)	9,223	.....	Abandoned	Aug. 1935
Pure Oil Co. No. 1 Paige	Wildcat	Wharton (T)	9,200	.....	Abandoned	June 1936
Humble Oil & Refining Co. No. 1-B San Leon Farms	Dickinson	Galveston (T)	9,199	8,442	Producing	Feb. 1936
Humble Oil & Refining Co. No. 2 Maco Stewart	Dickinson	Galveston (T)	9,181	9,100	Producing	Aug. 1935
Magnolia Petroleum Co. No. 1 Johnson Bayou	Wildcat	Cameron (L)	9,180	.....	Abandoned	Dec. 1936
Superior Oil Prod. Co. No. 1 Savoie	Bosco	St. Landry (L)	9,171	.....	Abandoned	Aug. 1934
Edwin M. Jones No. 2 Mitchell	Refugio	Refugio (T)	9,167	.....	Abandoned	Mar. 1932
Shell Petroleum Corp. No. 19 Heyd	Iowa	Jeff Davis (L)	9,161	5,226	Producing	Apr. 1936
Stanolind Oil & Gas Co. No. 5 State	Dickinson	Galveston (T)	9,160	7,980	Producing	July 1936
General Crude Oil Co. No. 1 Vincent	Tepetate	Acadia (L)	9,144	.....	Abandoned	June 1936
Humble Oil & Refining Co. No. 6-A Maco Stewart	Dickinson	Galveston (T)	9,142	.....	Abandoned	Feb. 1936
Humble Oil & Refining Co. No. 1 Clayton	Roanoke	Jeff Davis (L)	9,142	.....	Abandoned	Aug. 1935
Humble Oil & Refining Co. No. 1 Boone	Dickinson	Galveston (T)	9,141	8,116	Producing	Dec. 1936
Stanolind Oil & Gas Co. No. 1 Calcasieu National Bank	Wildcat	Jeff Davis (L)	9,139	.....	Abandoned	Apr. 1937
Stanolind Oil & Gas Co. No. 2 State	Dickinson	Galveston (T)	9,135	8,075	Producing	Feb. 1936
Humble Oil & Refining Co. No. 1 E. E. Anderson	Dickinson	Galveston (T)	9,127	.....	Producing	Nov. 1935
Humble Oil & Refining Co. No. 1-B Bayou Dev. Co.	Dickinson	Galveston (T)	9,125	.....	Producing	Nov. 1935
Superior Oil Prod. Co., No. 1 Johnson	Bosco	Acadia (L)	9,118	.....	Producing	Oct. 1934
Humble Oil & Refining Co. No. 2 Anderson	Dickinson	Galveston (T)	9,112	.....	Producing	Feb. 1936
Texas Gulf Prod. Co. No. 1 Westmoreland	Wildcat	Harris (T)	9,111	.....	Abandoned	Feb. 1936
Humble Oil & Refining Co. No. 1 Maley	Dickinson	Galveston (T)	9,110	.....	Producing	Oct. 1936
Humble Oil & Refining Co. No. 2-B Bayou Dev. Co.	Dickinson	Galveston (T)	9,107	.....	Abandoned	May 1936
Magnolia Petroleum Co. No. 1 Funchess	Wildcat	Jefferson (T)	9,098	.....	Abandoned	June 1936
Humble Oil & Refining Co. No. 1 Bayou Dev. Co.	Dickinson	Galveston (T)	9,085	.....	Producing	Sept. 1935
Continental Oil Co. No. 2-A American Realty	Wildcat	Calhoun (T)	9,083	.....	Abandoned	Apr. 1936
Union Sulphur Co., No. 12 Barbe	Gillis	Calcasieu (L)	9,101	.....	Active	.....
The Texas Co. No. 6 Rigolets	Lafitte	Jefferson (L)	9,056	9,476	Producing	Apr. 1937
Sun Oil Co. No. 1-A White	Seabreeze	Chambers (T)	9,055	8,343	Producing	Mar. 1937
Sun Oil Co. No. 1 H. Long	Nome	Jefferson (T)	9,045	.....	Abandoned	Mar. 1935
Union Sulphur Co. No. 1 Prairie Land & Canal	Wildcat	Calcasieu (L)	9,041	.....	Abandoned	Sept. 1935
Superior Oil Prod. Co. No. 1 C. B. Hernandez	Bosco	Acadia (L)	9,040	.....	Producing	Nov. 1935?
Superior Oil Prod. Co. No. 1 Prejan	Bosco	Acadia (L)	9,034	9,024	Producing	Oct. 1935
The Texas Co. No. 1 Jessen	Wildcat	Cameron (L)	9,030	.....	Abandoned	Apr. 1935
H. M. Naylor No. 2 Johnson-Bordeaux	South Jennings	Jeff Davis (L)	9,008	.....	Abandoned	Mar. 1937
Limited Oil Co. (Superior) No. 1 Miller	Wildcat	St. Landry (L)	9,005	.....	Abandoned	June 1936
Herton Oil Co. No. 3 Banta	Jeanerette	St. Mary (L)	9,005	.....	Abandoned	July 1936
Texas Gulf Prod. Co. No. 2 Wadsworth	Shepherds Mott	Matagorda (T)	9,002	.....	Abandoned	Sept. 1936
Continental Oil Co. No. 1 Henry Klumpp	Tepetate	Acadia (L)	9,000	8,330	Producing	Nov. 1935

* (L) Louisiana; (T) Texas.

important oil showings were encountered below 12,000 feet. Due to mechanical difficulties and previous trouble experienced with the hole, the test was given up, but it did make a strong gas flow for a time before sanding up.

Tests drilled below 10,000 feet at Roanoke, Jefferson Davis Parish, Louisiana, have encountered high gas pressures with indications of production at those depths although so far at Roanoke no commercial production has been obtained below the main producing horizon around 8,600-8,700 feet. Bosco, in Acadia and St. Landry parishes, which is producing from several sands, the deepest of which at present is at 9,100 feet, also has had indication of production below 10,000 feet with gas showings in tests drilled to that depth.

On the South Elton Prospect, Jefferson Davis Parish, Stanolind Oil & Gas Co. No. 1 Calcasieu National Bank, the first test drilled on this prospect, blew out at a depth of 9,139 feet while drilling, indicating deep production. The hole bridged, killing the gas and sticking the drill pipe, leaving a fishing job and was finally abandoned.

The latest commercial production below 9,000 feet is at Belle Cocotriz, Terrebonne Parish, Louisiana, where Shell Petroleum Corp., in February, completed its No. 1 Realty as the discovery well of the prospect in a sand at a total depth of 9,493 feet. This was the company's first test on the prospect.

As for production below 8,000 feet, there are 15 fields with such production, representing a total of 210 wells. In three the production is below 9,000 feet, leaving 12 fields which are producing only between the depths of 8,000 and 9,000 feet. Of the 12 fields, nine do not have production below 9,000 feet, leaving three with both 8,000-foot and 9,000-foot or below production.

Outstanding among the 8,000-foot producing fields have been Bosco, Roanoke and Tepetate in Louisiana, and Dickinson, in Texas. These fields account for 171 of the total of 184 wells completed in 8,000-foot sands alone. The other 8,000-foot sand fields have received only limited development so far with only one or two wells each.

The extent of deep sand exploration on the Gulf Coast is indicated in an accompanying table which shows a total of 398 tests drilled to depths below 8,000 feet. These tests represent a total of 86 different fields or prospects on which drilling below 8,000 feet has been done. These are scattered from one end of the Gulf Coast to the other.

It is interesting to note 18 tests have been drilled to depths below 10,000 feet (two below 12,000 feet). With the exception of two, all are in different fields or areas. Twenty-six additional tests in scattered fields or areas have been drilled to between 9,500 and 10,000 feet, 61 others to between 9,000 and 9,500 feet, and 293 tests to below 8,000 feet but above 9,000 feet.

Six months ago there were only eight tests drilled below 10,000 feet, 20 others which had reached between 9,500 and 10,000 feet, 53 additional which had been drilled to between 9,000 and 9,500 feet, and 235 tests to between 8,000 and 9,000 feet. Thus, 10 of the 18 tests which have reached 10,000 feet have been drilled to that depth within the past six months. In turn, within that period, the number of 9,500-10,000-foot tests has been increased by five; the 9,000-9,500-foot tests by eight, and the 8,000-9,000-foot tests by 58.

Coastal Louisiana has led in deep drilling on the Gulf Coast. This general deeper drilling in the Louisiana sector has been inspired by the great thickening and dipping of the formations eastward and coastward into that state, making it necessary for operators to drill to much greater depths to reach the corresponding horizons which are producing on the Texas Coast.

West Premont Field

Considerable drilling activity is under way in the Premont area of southern Jim Wells County, Texas, following discovery of new production several months ago. The West Premont field, as the new pool is termed, lies about 2 miles west of Premont, in the center of an area which has been developed and subdivided into small garden or farm lots. The old gas producing area, named the Premont field, lies to the east.

West Premont was opened early in October by Tom Graham of Corpus Christi when his No. 1 Bennett in Lot 87, section 76 of the subdivision, came in making an initial production of 225 bbls. of fluid comprising oil and fresh water. The discovery sand was topped at 2,340 feet and the crude showed a gravity of 22.6.

Development of the new area was slow, until, with the discovery of another better sand horizon, interest grew to the present active stage. Graham & Gilcrease Oil Co. No. 2-A Bennett, an eastern offset of No. 1, cored a sand at 2,254-65 feet late in February, which showed good saturation, and was completed for a good producer. Since that time, a total of 15 producers has been completed in that upper sand, including new tests drilled, and former tests, which have been plugged back to 2,250 feet. The 2,250-foot sand averages better than 10 feet in thickness, compared to about 5 feet in the deeper sand.

A new prospect for further production is seen in a body at 3,100 feet. Graham & Gilcrease Oil Co. No. 1 Singer was originally completed in sand at that level for a gasser. At present it is used as a source of fuel for other drilling rigs, but it is believed the sand will produce oil if carried deeper. A rig in the field is now drilling to that sand to test the possibility of opening a third oil sand.

Although a number of tests are active in the field, and 15 wells have been completed, the area of the structure is not yet evident. All tests have been drilled in offset locations, and, to date, the proven acreage does not exceed 200 acres. All wells are making their allowable of 100 bbls. per day,

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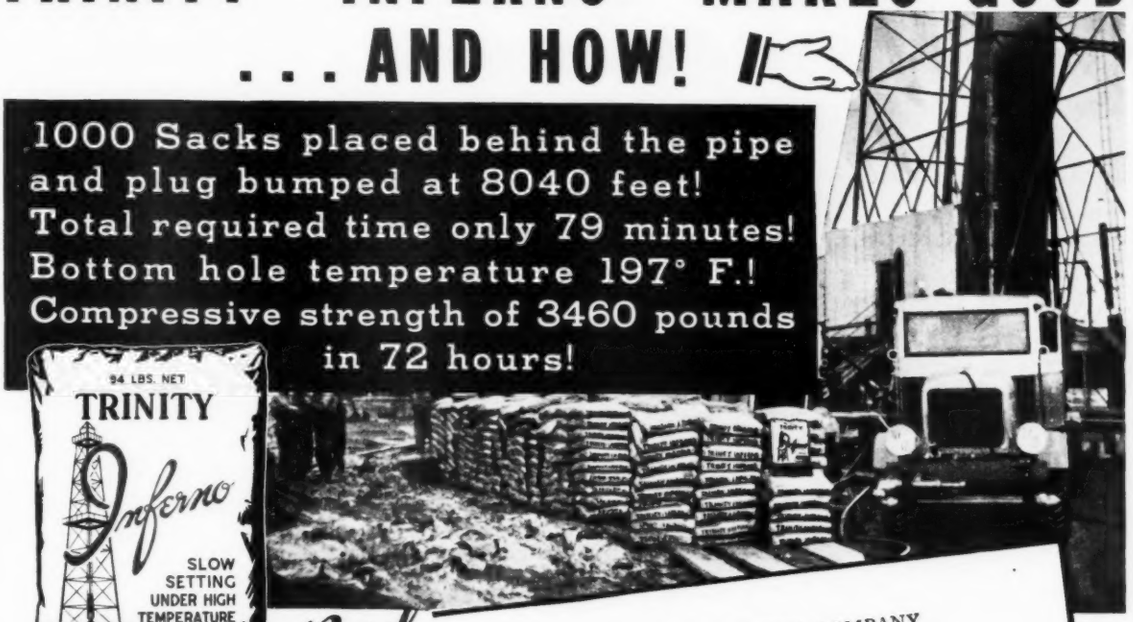

Read THIS LETTER

THE PANTANO PETROLEUM COMPANY
1411 Second National Bank Building
HOUSTON, TEXAS

Carleton D. Speed, Jr. Gen. Mgr.

March 9, 1937

Trinity Portland Cement Company,
3515 Navigation Blvd.,
Houston, Texas

Gentlemen:

On January 16, 1937, we placed 1,000 bags of Trinity Inferno behind the oil string on our James McDougal No. 1, Hidalgo County, Texas. In spite of high bottom hole temperature, only 1 hour and 19 minutes elapsed from the time the first sack was ripped until we placed 1,000 sacks behind our pipe and bumped the plug at 8,040 feet. Analyses of cylinders taken from cement mixer showed compressive strength of 3,460 pounds in 72 hours.

Contrary to the general consensus of opinion that we would not get 1,000 sacks out behind the casing, we accomplished the work with ease and now that the well has 3,400 pounds pressure on the casing and tubing, we are more than pleased with our cement job.

Yours very truly,

PANTANO PETROLEUM COMPANY

Carleton D. Speed Jr.

Carleton D. Speed, Jr.
Vice-Pres. & Gen. Mgr.

CDS:MB

- **Number of sacks used (1000) is a record for the South Gulf Coast area, so far as we can learn! Operators in this area ordinarily use 300 to 450 sacks on their oil strings where bottom hole temperatures are high.**
- **The elapse of time of 1 hour and 19 minutes indicates the slurry was very fluid throughout the run. If it had stiffened, the plug could not have been pumped down in 35 minutes! Average weight of slurry was 15.65 pounds.**
- **The pressure gauge showed maximum of 1650 pounds required to land the plug. Normal circulating pressure was 1250 pounds. The small differential required to pump the slurry out behind the pipe and land the plug on bottom also indicates fluidity of the slurry!**
- **Operators experienced in this area were of the opinion that it would be impossible to get 1000 sacks out behind the casing!**
- **And a high bottom hole pressure of 3400 pounds per sq. in. added to the difficulty!**
- **Cylinders made from the actual slurry developed the compressive strength of 3460 pounds per sq. in. in 72 hours, proving that "INFERNO" develops ample strength!**
- **Play safe on your next "deep hole" cement job . . . use Trinity "INFERNO" and be sure of the many advantages it provides. Your local lumber and building material dealer can supply you.**

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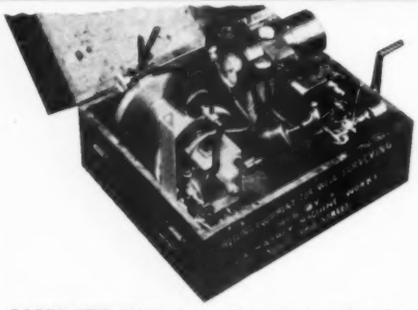

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although some are being jetted, and a pumping program may be undertaken on some of the leases.

The field production, now 1,500 bbls. per day, is moved through a 6-mile 4-inch welded line to a loading rack on the Southern Pacific Railroad. The line, owned and operated by the Jim Wells Pipe Line Co. was completed about three weeks ago.

Drilling in West Premont presents few problems; the sand is comparatively shallow; there are no hard formations encountered, and the pressures are low. An ample water supply for steam drilling is found at shallow depths, and gas fuel is supplied by the producing wells.

Two joints of 10-inch surface casing are commonly set for surface string, and on the oil sand, both methods of completion are followed. In some tests casing is set on bottom and perforated, and in others it is set on top and drilled through into the pay.

One operator is drilling at least 20 wells, and on that basis, the field will be active for some time in spite of the short drilling time of one week required for each well. It is estimated, on present indications, that the field will exceed 60 wells. Principal operators include Graham & Gilcrease Oil Co., Diamond Halff Oil Co., C. G. Glasscock, and Securities Royalty Co.

Deep McCampbell Field Yields High Gravity Crude Oil

One of the deepest fields in the Lower Gulf Coast area is the McCampbell field, recently discovered, northwest of Aransas Pass, lying in both San Patricio and Aransas counties. It is named for the McCampbell ranch.

McCampbell was discovered by Buckingham Oil Co. in July, 1936. When its No. 1 McCampbell was carried to a total depth of 7,501 feet. After blowing out for a short time, the well was killed, and brought in with a second rig in a sidetracked hole at 6,554-60 feet. The discovery came in spraying about 100 bbls. per day of high gravity crude with much gas, but after production for a short time, the gas-oil ratio was reduced, and the producer has continued to make its allowable continuously.

The second test was drilled by Atlantic Refining Co. on the Maryland Trust Co. tract across the county line from the discovery, in San Patricio County. Atlantic No. 1 is a diagonal northwest offset to the Buckingham well. After setting casing through sand at 6,538-55 feet, the second well was completed for an initial of 13 bbls. per hour on a $\frac{3}{8}$-inch choke at a working pressure on the tubing of 1,340 pounds. Completion of the subsequent wells, most of which have been brought in since the first of the year, is essentially similar, showing high pressures but relatively lower initials until flowing for a short time.

The sand producing in McCampbell is Marginulina in age. It is thin, clean and finely grained, averaging 6½ to 7 feet in thickness. The sand body is believed to be of the same shoreline deposit type which produces in most of the fields along the Lower Gulf Coast, and since no important outposts have been drilled to date the area is not yet known. The proven acreage, as shown by 13 producing wells drilled on 10-acre tracts, is 130 acres, which may be augmented by Collins & Broughton No. 1 McCampbell, about ½ mile northwest of production, which is on the sand and swabbing.

Because of the depth of the producing sand, together with the high pressures encountered, heavy rigs are used. Blowout preventers and other safety equipment is standard, and drilling mud is carefully checked and kept at 10 pounds when nearing the sand. Because of the absence of high pressure gas sands at shallow depths, no conductor casing is required, and operators set from 1,250 to 1,430 feet of 10¾-inch surface cas-

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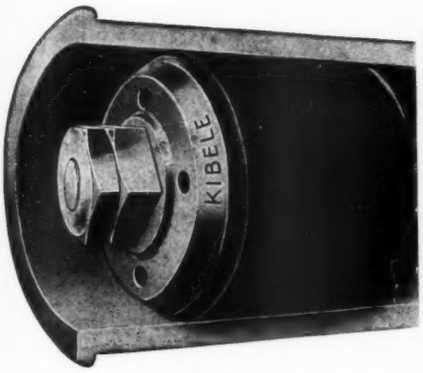

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ing. In all cases to date, the 7-inch oil string has been set through the sand on bottom, and operators have perforated for completion running screen and 2 to 3 sets of cones are used in drilling the body. A hard sand encountered at 5,000-5,500 feet requires rock bit drilling,of about .008 gauge.

When first brought in, the producers make about 20-25 bbls. of oil at pressures averaging 2,500 pounds on one-eighth inch chokes. After flowing for a week, they increase flow to where they are producing their allowable of 100 bbls. through one-eighth and 9/64-inch chokes with pressures of 1,900 pounds on the tubing and 2,250 pounds on the casing. Gas-oil ratios vary in the different wells, 8,250 being about average, and none of the tests has shown over 10,000, the Railroad Commission's limit. The crude runs about 48 gravity, one of the highest gravity oils produced in the Lower Gulf Coast.

The greater share of acreage in and around the field is held by Atlantic Refining Co. and associates and Buckingham Oil Co. Atlantic has on its "B" lease, four producers and two drilling rigs. On its "C" lease, the company has three wells and one dry hole. Across the line in San Patricio County there is one Atlantic well and one test is drilling. The Buckingham "A" lease has four wells and one active drilling test, and the "B" lease has one well and two drilling. Other operators include Landreth Prod. Co., Collins and Broughton and Rutherford Oil Co. The first two are drilling their first tests, and the latter have their first producer, the most easterly well.

Contractors have rigs on most of the drilling wells. D. W. Dyer is drilling two tests for Atlantic, Heyser, Heard and Clark are drilling their third test; E. M. Jones and J. & C. Drilling Co. are active on Buckingham tests, and Collins is drilling his own wells and one for Landreth Production Co.

Outlet for production is maintained by Atlantic Pipe Line Co. through a 2-mile 4-inch line to the Atlantic trunk line which joins the Refugio district with a deep water terminal at Harbor Island. Atlantic is now taking the full 1,300 bbls. per day production, but T. N. Davey has purchased a site along a railroad right of way in Aransas Pass for a proposed loading rack, having an option on some of the crude should he lay a line.

Although only one sand is producing in McCampbell at present, shows of other pays have been encountered. The discovery, Buckingham Oil Co. No. 1 McCampbell had other shows below the present producing horizon which were not tested. In a deep test being drilled, further sands are being cored.

Van Vleck Field—Matagorda County

Since the discovery of the Van Vleck field, Matagarda County, Texas, in 1934, by Skelly Oil Co., four additional sands have been developed which have extended production of approximately 1,500 acres.

A systematic development program has been employed by the company which until the first of the year operated three rigs. All production has been developed from the Frio sand encountered at 7,000, 7,500, 7,700, 7,900 and 8,200 feet. To date the company has completed 19 wells. Sixteen were completed in the 7,500-foot pay, one from the 7,000-foot sand and two in the 8,200-foot pay.

With the field still undefined in many directions, numerous locations remain to be drilled which probably will be completed by the present two rigs operated under contract by Rutherford Drilling Co.

The daily average production for the week ending March 20 was 1,653 bbls. and is taken by Texas Pipe Line Co.'s 6-inch main trunk line from West Columbia to the company refinery at Houston.

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Geophysical Exploration Gains

Geophysical explorations along the Gulf Coast, extending westward from the Mississippi River through the lower coastal region, has been steadily increasing and at the present time, with 115 active crews reported, this district leads all others in geophysical activities.

During the past several months, most of this activity has been centered in the upper Texas and Louisiana Gulf Coast. A recent survey shows a total of 80 active crews, 41 being on the Texas side and 39 along the Louisiana Coast. While practically every county and parish in these two areas is being combed for additional prospects, Brazoria, Harris, Jackson and Matagorda counties, with 21 crews, are the most active while in Coastal Louisiana the lead is being taken by St. Bernard, Iberville and Terrebonne parishes.

The discovery of the first salt dome structure in Mississippi and the favorable showings encountered in several wildcats have attracted wide attention to that state and it is being worked extensively with geophysical instruments. A recent report shows a total of 19 crews within 19 counties. This work is being done by Gulf Oil Corp., Sun Oil Co., Stanolind Oil and Gas Co., Phillips Petroleum Co., Tide Water Associated Oil Co., Southern Natural Gas Co., and United Gas Co. Most of this work is being done by reflection and torsion balance instruments, although Gulf Oil Corp., is operating 6 gravitometer crews in Covington, George, Greene, Jefferson Davis, Perry and Stone counties.

With discoveries of the deeply seated salt dome type of structures in the Lower Gulf Coast, geophysical exploration is showing an increase each month. Of particular interest is work in Nueces and San Patricio counties where 9 crews are engaged. Companies having crews in these counties include Barnsdall Oil and Refining Co., Sinclair Prairie Oil Co., Gulf Oil Corp., Texas Co., Magnolia Petroleum Co., Navarro Oil Co., Humble Oil and Refining Co., Continental Oil Co., Atlantic Refining Co., Phillips Petroleum Co., Pan American Production Co. and Seaboard Oil Co.

Practically every major company has one or more crews operating throughout the Gulf Coast District. Gulf Oil Corp., Humble Oil and Refining Co. and Texas Co. have a total of 39 active crews.

The tables summarize geophysical activity by districts and types and total number of crews by county and parish.

TABLE OF GEOPHYSICAL ACTIVITY ALONG GULF COAST AREA

Parish or county—	Reflection	Torsion balance	Gravitometer	Pendulum	Magnetometer
Louisiana Gulf Coast					
Acadia	1	2	0	0	0
Jefferson Davis	1	0	0	0	0
Avoyelles	1	1	0	0	0
Calcasieu	1	0	0	0	0
Cameron	1	1	0	1	0
Evangeline	2	0	0	0	0
Iberia	1	0	0	0	0
Iberville	3	0	0	0	0
Jefferson	1	0	0	0	0
Lafourche	2	0	0	0	0
Plaquemines	1	0	0	0	0
Rapides	1	0	0	0	0
St. Bernard	5	2	0	0	0
St. Martin	2	0	0	0	0
St. Mary	0	1	0	0	0
St. Tammany	0	0	0	0	1
Terrebonne	3	0	1	0	0
Vermilion	2	0	0	0	0
West Feliciana	0	1	0	0	0
Total	28	8	1	1	1
Mississippi					
Covington	1	0	6	0	0
George	1	0	0	0	0
Hinds	1	0	0	0	0
Lamar	1	0	0	0	0
Lincoln	0	1	0	0	0
Panola	1	0	0	0	0
Pearl River	1	0	0	0	0
Perry	0	1	0	0	0
Pike	1	0	0	0	0
Total	7	2	6	0	0
Texas Gulf Coast					
Austin	1	0	0	0	0
Brazoria	3	3	0	0	0
Chambers	2	1	0	0	0
Fort Bend	2	1	0	0	0
Harris	4	0	0	0	0
Hardin	0	1	0	0	0
Jackson	5	2	0	0	0
Jefferson	3	0	0	0	0
Liberty	2	0	0	0	0
Matagorda	4	0	0	0	0
Newton	1	1	0	0	0
Orange	1	0	0	0	0
Polk	1	0	0	0	0
Tyler	1	0	0	0	0
Wharton	1	1	0	0	0
Total	31	10	0	0	0
Lower Gulf Coast					
Aransas	2	0	1	0	0
Calhoun	1	0	1	0	0
Cameron	2	0	0	0	0
Duval	0	0	2	0	0
Goliad	1	0	0	0	0
Gonzales	1	0	0	0	0
Hidalgo	1	1	0	0	0
Kenedy	0	1	0	0	0
Nueces	5	0	0	0	1
Refugio	0	1	0	0	0
San Patricio	4	0	0	0	0
Victoria	1	1	0	0	0
Willacy	1	1	0	0	0
Wilson	1	0	0	0	0
Total	20	5	4	0	1
Total all districts	86	25	11	1	2
Grand total			125		

GEOPHYSICAL CREWS OPERATED BY MAJOR COMPANIES

Name of company—	Number of crews
Gulf Oil Corp.	13
Humble Oil and Ref. Co.	13
Texas Co.	13
Atlantic Refining Co.	7
Stanolind Oil and Gas Co.	6
Sun Oil Co.	6
Magnolia Petroleum Co.	5
Shell Petroleum Corp.	4
Amerada Petroleum Corp.	4
Sinclair Prairie Oil Co.	4
Tide Water Associated Oil Co.	2
Pure Oil Co.	1
Continental Oil Co.	1
Total	79

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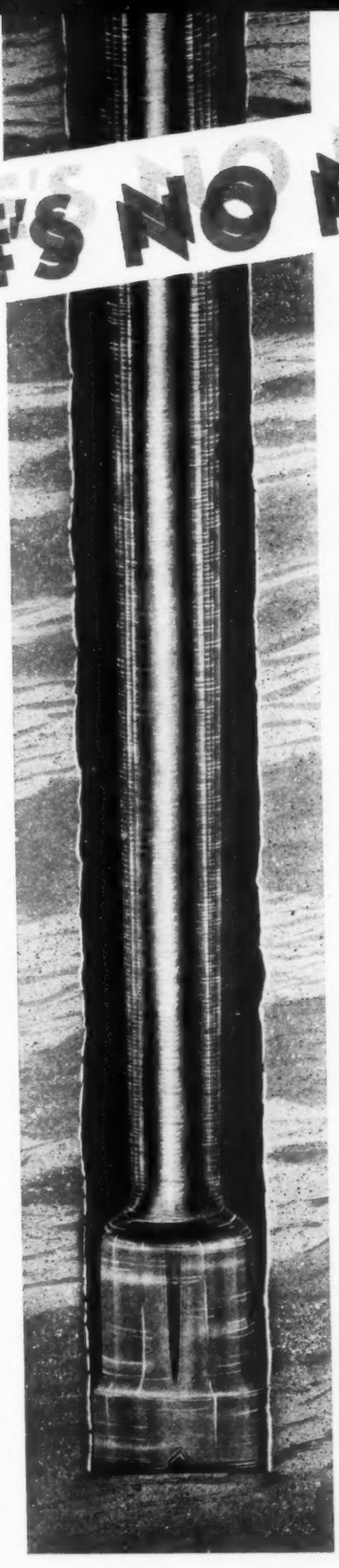

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Learn for yourself how the modern Sievers Reamer will give you true reaming and stabilizing efficiency in *one* tool which is safe to use and which costs you nothing when you consider the successful results secured.

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Every experienced oil man realizes how dangerous vibration always is at critical points above a drilling bit. Not only is excessive vibration likely to cause twist-offs, but a bit left free to gyrate or walk fails to deliver its maximum cutting efficiency and is apt to drill off-vertical hole.

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LOOK ON

Pages 1538 to 1540 1937 Composite Catalog where the Security Slush Pump Valve also is described.

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"H-K" designed for open holes only—provides permanent, accurate, photographic records of inclination and direction on paper discs five minutes after removing instruments from hole. (U. S. Patents 1,812,994; 2,027,642 and others pending.)

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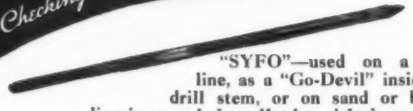
"SURWEL" provides a map of the well at all depths, prepared from actual photographic records, made while going in and coming out (U. S. Patents 1,124,068; 1,812,994; 1,898,473; 1,959,141; 1,960,038; 2,006,556; 2,012,138; 2,012,152; 2,012,455; 2,012,456 and others pending.)

Three Self Checking **SYFO** Clinograph



"SYFO"—used on a wire line, as a "Go-Devil" inside the drill stem, or on sand or bailing line in open hole—affords quick, inexpensive daily records of vertical deviation in drilling, without the use of dangerous acids. (U. S. Patents 1,962,634; 2,013,875 and others pending.)

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Development of Flank Sands Revives Coastal Drilling

While search for additional crude reserves along the Louisiana Gulf Coast is being undertaken by considerable wildcatting, new reserves are being added by development of deep sands around the flanks of several old salt dome fields which at present lead all other newer and more deeply seated types of fields in drilling activity.

The old Jennings (Evangeline) field in Acadia Parish, Coastal Louisiana oldest producing field, is being revived by a small boom as a result of deeper exploration during the past year. Discovered in 1901, shortly after Spindletop, this field had produced up to January 1, 1937, 76,186,805 bbls. of oil and at present has a total of 7 rigs running after several years of inactivity. Deep drilling followed discovery of new production from a sand at 7,400-7,500 feet opened on the southeast flank by Yount-Lee Oil Co. in 1929.

Following a continuous drilling campaign by Yount-Lee Oil Co. and the Stanolind Oil & Gas Co. which later took over the holding, Shell Petroleum Corp. staked No. 1 Conover-Community in section 40 on the south flank and opened production in June, 1936, from 25 feet of sand bottomed at 7,545 feet. This development was further encouraged by Superior Oil Producing Co. which completed No. 1 Leckett on the west flank from 18 feet of sand bottomed at 6,380 feet. This company has recently completed 3 additional producers and is keeping 2 rigs running. Other operations are carried on by A. G. Glassell and others on the J. Trusel lease, Shell Petroleum Corp. on the Community lease, Stanolind Oil & Gas Co. on the Houssiere Latrelle lease and S. Rhoden and others on the Iowa-Jennings tract.

Another old salt dome in which activity has been increasing takes in the East and Old Hackberry fields in Cameron Parish where 12 rigs are running, the most being operated by Stanolind Oil & Gas Co. in section 22 which recently completed several good producers. West Hackberry received its first production in 1928 and out of a total of 54 producing wells completed, 25 are still producing, having a daily average production of 2,715 bbls. per day.

The potentialities of the New Iberia dome in Iberia Parish has been enlarged by discovery of prolific production on the north, west and southeast flanks which has been responsible for active drilling during the past 16 months. This development is being done by William Helis and Texas Co. who have a total of 5 rigs running. Small production from the caprock was opened in 1917, but it was not until 1935 and 1936 it got its first important production. There have been 46 wells drilled of which 25 are producing a daily average of around 21,000 bbls. Drilling activity includes Wm. Helis No. 7 Bernard, No. 4 Bullock and Burke, and No. 3 Schwing and Texas Co. No. 1 Duke and No. 5-B Hanzen.

From a total of 48 known salt domes in Coastal Louisiana, 34 have been proved productive and the balance are looked upon as future reserves. Recent flank drilling at the old Jefferson Island dome in Iberia Parish has encouraged immediate development of these old structures, particularly Avery Island, Weeks Island in Iberia Parish and Cote Blanche and Belle Isle in St. Mary Parish which are in almost a straight line extending southeasterly from Jefferson Island where Jefferson Lake Oil Co. No. 414 Lake Pigneur has shown indications of production.

Before the showing of the Jefferson Lake test, many geologists were of opinion these five piercement types of domes would never produce, due to the upward movement of the salt structure which shoved the sands to the surface causing a migration of the oil. However, with the drilling of Jefferson Lake Oil Co. test which showed sev-

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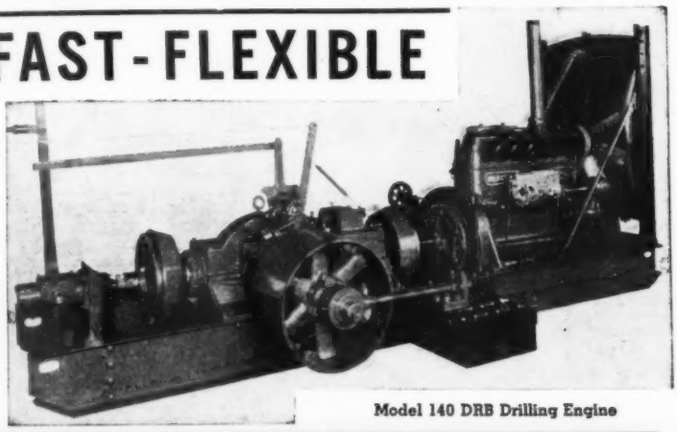

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eral thousand feet of oil at a total depth of 5,945 feet, this theory apparently is not true, consequently these domes, heretofore considered nonproductive, are now recognized as potential future oil reserves.

Nueces County

Unusually active wildcatting has kept Nueces County, Texas, in the spotlight in the Lower Gulf Coast for several months. The resulting discoveries have opened two fields recently, and the deeper drilling in already proven fields has brought to light a number of deeper pay sands. While the Saxet field is the outstanding example of deeper production discovery in proven territory, other smaller fields have shared in the same development to an important degree.

The London field of central Nueces County shows promise of becoming an important producing area. The discovery well was begun by Cosner & Cosner of San Antonio on the Stockton land about 12 miles southwest of Corpus Christi. It was later taken over and completed by Wellington Oil Co. The test was carried to a total depth of 7,005 feet, encountering many shows of production. The structure is clearly defined, and the indication of producing sands in an electrical survey correlating coring information, was very favorable.

In testing those sands, however, salt water broke in and it was not until operators tested an upper sand that they obtained a good test, and were able to complete the well. It is generally believed a poor cementing job allowed the intrusion of salt water in the lower sands.

Further development of the discovery made in January did not come until late in February, and at the end of March three tests were drilling. Cosner & Cosner No. 1 Stockton, a diagonal southwest offset to the discovery well, Wellington Oil Co. No. 1 Stockton, is set on the field sand at 4,700 feet and is attempting completion. A second test, Gem Oil Co. No. 1 Stockton, encountered a sand at 4,560 feet which tested salt water, and is drilling for the field sand. Crown Central Petroleum Corp. has spudded in a west offset test.

About 2 miles south-southwest of the London field, Seaboard Oil Co. and I. J. Allen recently brought in No. 2 Chapman to discover a second field. This has been named the Chapman Ranch field, for the large tract on which it is located. The producing sand in the second field is topped at 6,464 feet.

The presence of small leases in those two fields, held by a large number of operators, will speed development of the new production. Other wildcats are being planned for the area.

Recent shows for new production in the Clara Driscoll and Agua Dulce fields have attracted attention to deeper exploration in proven areas. Wellington Oil Co., major operator in Clara Driscoll, has cored a sand at 5,433 feet which showed oil in a test made the last week in March, at 5,425½-33 feet. Casing has been set and a production test may open another producing sand for the field which has two pay horizons at present.

A discovery in what is believed to be Vicksburg sand at 7,382-95 feet was made late in March by United Producing Co. in No. 1 Harvey. The test, in the Garza Survey in the Agua Dulce field, which cored rock at 7,396-98 feet and salt water sand topped at 7,398 feet and will drill to 8,000 feet before making any production tests. Another sand was cored at 7,400-15 feet.

The continued drilling of wildcats in the county, and the deeper exploration in areas of proven production presage activity and probable new discovery for the remainder of the year. In addition, development of the newly opened fields will call for more drilling rigs, constituting a possible record activity in the county.

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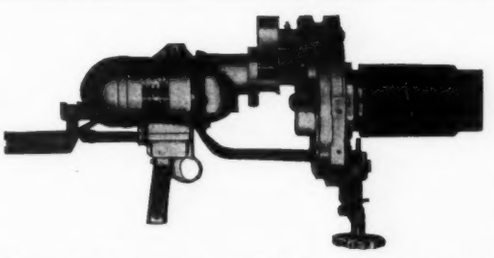

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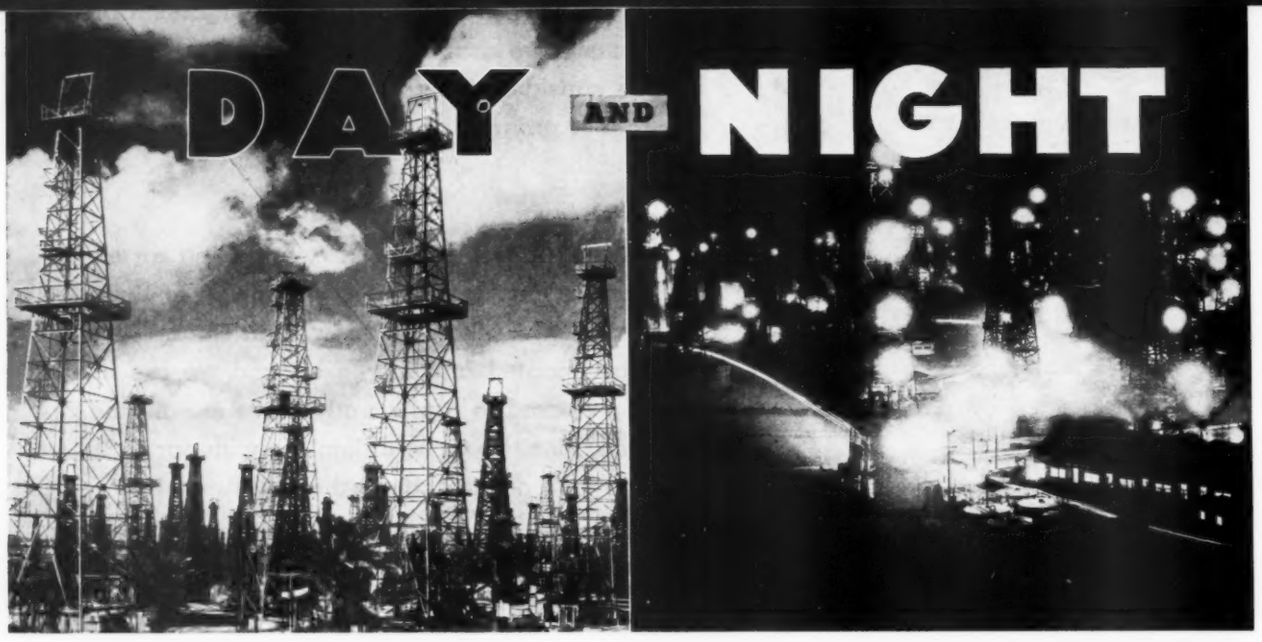
FAST—DEPENDABLE SERVICE



BAASH-ROSS TOOL COMPANY

RENTAL

Get the tools you need *when you want them* from the big stocks carried at our shops in Texas, Oklahoma and California. You'll find a complete line of drilling and fishing tools, both rotary and cable tool. Whether your need is small or large, Baash-Ross doors are always open to serve you at a reasonable price—and you can depend on our tools to give you safe service. Ask for the Baash-Ross stock and price list of rental tools—keep it handy.

FIELD SERVICE

Day or night—in any kind of weather—a telephone call or wire from you will start an experienced Baash-Ross service man on his way to your well, bringing the RIGHT tools to do your job in the right way — safely and efficiently. We operate a line of complete sizes of Baash-Ross drill pipe and casing cutters, rotary jars, rotary releasing spears and sockets, casing perforators, safety joints, and many other fishing tools. Read the detailed, illustrated descriptions of these safe, modern tools in our 32-page section in the 1937 Composite Catalog — then call a Baash-Ross service man for your next job.

SALES

Quick service to your well of any of the tools in the Baash-Ross plant in Houston, or from stock at one of our other branches. Descriptions and ordering information are in the Baash-Ross section of your 1937 Composite Catalog.

BAASH-ROSS TOOL COMPANY

BAASH-ROSS TOOL COMPANY

Telephone 3-4406 1559 S. E. 29th St. OKLAHOMA CITY	Telephone Fairfax 9363 5300 Clinton Drive HOUSTON	General Offices: 5512 Boyle Ave. LOS ANGELES	Export Office: 30 Rockefeller Plaza NEW YORK, N.Y., U. S. A.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

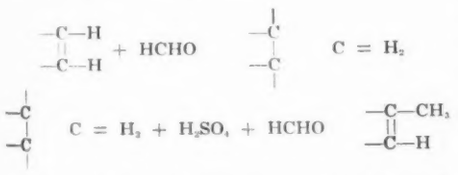
Nature of the Reactions Involved in the Formolite Test

We should like to obtain some information, if possible, covering the chemical nature, or reaction, involved in the formolite test.—F. D.

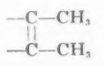
The formolite test consists in adding 1 volume concentrated sulfuric and 1.5 volume formaldehyde (40 per cent) to 1 volume petroleum oil. After the vigorous reaction ceases a yellow-brown amorphous solid separates. After thorough washing and drying this is weighed. This solid is formolite. It is infusible and insoluble in ordinary reagents. The formolite number is the weight per 100 ml. of oil.

The exact nature of the reaction is not known. Nastjukow, who originated the test in 1904, suggested there was no reaction with hexane, amylene, hexylene, caprylene, diallyl, cyclohexane or dicyclohexane, but positive reactions were obtained with several unsaturated cyclic compounds including menthene, camphene, benzene and toluene.

According to Nastjukow, the reaction of formaldehyde with these various hydrocarbons is regarded as a union of the methylene group of the formaldehyde with the —C = C— group of the original unsaturated cyclic hydrocarbon or olefinic hydrocarbon molecule. The instability of the trimethylene ring thus formed leads to the reformation of a double linkage, thus:



The product is the formolite compound formed. This can be further acted upon in a similar manner as above, to give:



Condensation can now go no further. No experimental proof has been offered to substantiate this hypothesis.

References: D. R. Stevens, The Oil and Gas Journal, May 13, 1926, page 130. Nastjukow, J. Soc. Chem. Ind., 23, 1.082, 1904, and 30, 201, 1911.

Automatic Test Instruments for Detecting CO in Air

Can you furnish a description of the principle upon which automatic instruments operate for the detection of carbon monoxide?—L. R.

There are several automatic carbon monoxide analyzers marketed. Kintz and Fowler, U. S. Bureau of Mines, have recently described several of these. The description following is from their article:

Hoolamite Detector—When carbon monoxide (CO) is passed through ground pumice saturated with iodine pentoxide in the presence of fuming sulfuric acid, free iodine is liberated, which stains the pumice a greenish color. By comparing the shade of green obtained by a measured volume of air with a color scale, the amount of carbon monoxide can be determined. The range of this instrument is 0.05 to 1 per cent. Its accuracy depends somewhat on the ability of the individual to estimate the true shades. This device is used extensively by the Bureau of Mines, manufactured-gas companies, and others desiring to ascertain the presence of carbon monoxide.

Pyrotannic Acid Detector—This device is compact but requires a little technique in its operation and is used primarily for detecting the presence of carbon monoxide in the blood. It is very accurate and will detect from zero to 0.2 per cent of the gas in the air. It operates on the principle that the affinity of carbon monoxide for the hemoglobin of the blood is about 300 times that of oxygen. To test the atmosphere for carbon monoxide a small bottle is filled with the air to be examined, and 0.1 cm.³ of blood, which is diluted to 2 cm.³ with distilled water, is placed in the bottle. After about 15 minutes of agitation this blood solution is treated with a compound of pyrotannic-pyrogallic acid and the resulting color compared with a standard color scale.

Continuous Carbon Monoxide Detectors—These detectors are made in stationary and portable models. All models require a supply of electric current. (Dry-cell or storage batteries may be used.) The operation of these machines is based on the fact that when carbon monoxide passes through a compound known by the trade name of "Hopcalite" it is converted to carbon dioxide and thus generates heat. The amount of heat generated is in direct proportion to the amount of carbon monoxide present. By means of thermocouples the amount of heat is recorded on a dial marked in percentage of carbon monoxide present. These instruments are accurate, the portable type having a dial graduated to 0.01 per cent.

Reference: G. M. Kintz and H. C. Fowler, U. S. Bureau of Mines, I.C. 6,915.

CHEMICALS FOR THE PETROLEUM INDUSTRY

HYDRATED LIME

Use — Neutralizing agent, sulfur removal, water treatment, grease making.

Form—Fine white powder.

Formula—$Ca(OH)_2$.

Specific gravity—2.078.

LIMITATIONS

	Per cent
Calcium hydroxide, min.	93.50
Calcium carbonate, max.	4.00
Calcium oxide, max.	2.50
Magnesium (Mg.), max.	0.40
Iron and aluminum oxides, max.	0.25
Silica, (SiO_2), max.	0.40
Moisture, max.	1.00
Screen test, pass 200 mesh, min.	100.00

Must be free from lumps, grit, stone, cinders, or any material of an abrasive nature.

Analyses of Samples of Oil From West Texas Counties

It will be much appreciated if you will furnish us with information showing the character of the oil produced in Winkler, Crane, Upton and Pecos counties, Texas. Analyses of representative oils from these sections are desired.—M. E. L.

We do not have any analyses of these oils that have been made recently; the information following was obtained several years ago.

ANALYSES AND YIELDS—WEST TEXAS CRUDE OILS

Analyses

County—	Winkler	Crane and Upton	Pecos
Gravity, deg.	30.2	29.4	30.1
Per cent sulfur	1.53	1.0	2.4
Cold test	60	...	15
Per cent b.s. and water	.8	.3	.2
Color	Black	Black	Dk. gr.
Hydrogen sulfide content	...	High	High
Vis. Saybolt Univ. at 70° F.	80	...	...
Vis. Saybolt Univ. at 100° F.	59	...	...

Yields

Gasoline, 437 e.p.	25.4	23.2	29.0
Kerosene, 41 gr.	8.8	7.0	6.0
Gas oil, 33 gr.	28.0	28.0	28.5
Fuel oil, 18/26	35.3	39.0	34.0
Loss	2.5	2.8	2.5

Extracting Perfumes From Flowers With Petroleum Distillates

Are any of the petroleum distillates used or suitable for the extraction of perfumes from flowers and plants? If you have any information on this subject I'll appreciate knowing about it.—H. G. D.

Fractions from petroleum that have been thoroughly refined are used for extracting oils, waxes and perfumes from plants. The preparation of perfumes naturally requires that the extracting agent shall be free from substances that may tend to destroy or contaminate the delicate odor of a perfume or a flower. It is true that the most volatile hydrocarbons of petroleum have but little odor, the heavier the hydrocarbon liquids the greater is the tendency toward pronounced strong odors.

The principle of the process for extracting perfumes from flowers by the use of petroleum distillates is to treat the petals in the cold in an enclosed vessel, then the extract is separated by pressing and distillation of the extract. The liquid being recovered as a distillate and the perfume collects in the oily or wax-like residue.

Easily extracted substances may require so little as 100 gallons per pound of perfumed residue; others consume up to 400 gallons of the distillate. The best solvents are those of close boiling points, such as between 140° and 170° F., although some are used up to 190° F. The solvent must be free from unsaturates and sulfur compounds.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Swab Action in Rotary Wells

In some descriptions of blowouts on rotary wells they state a "swabbing action" occurs when the drill pipe is withdrawn. I have a general idea of what is meant but wonder if there is any way this force may be computed.—W. O. S.

A good illustration of the swab action is given in I.C. 6,938, "Some Causes of Blowouts During Drilling and Means of Prevention, With Special Reference to the Gulf Coast Region," by Charles B. Carpenter, U. S. Bureau of Mines.

"To illustrate the effect of swab action, assume a 9-inch diameter hole being drilled at a depth of 5,000 feet, a formation pressure of 2,100 pounds per square inch (143 atmospheres), and a drilling fluid weighing 10 pounds per gallon. The volume of the hole evacuated by the withdrawal of one stand (90 feet) of 4½-inch O.D. drill pipe and the evacuated space at the bottom of the hole filled simultaneously with gas at a pressure of 143 atmospheres is $0.441 \times 90 = 39.7$ cubic feet, which, if expanded from 143 atmospheres to atmospheric pressure at the surface, will occupy a volume of 39.7×143, or 5,677 cubic feet. The volume of drilling fluid displaced by gas as it rises through the column will be

$$\frac{39.7 + 5{,}677}{2} = 2{,}858 \text{ cubic feet.}$$

The total volume of drilling fluid remaining in the 4,910 feet of hole after the 90 feet of hole below the drill bit has been freed of drilling fluid is $44.2 - 11.04 = 33.16 \times 49.10 = 1{,}628$ cubic feet; this volume is $2{,}858 - 1{,}628 = 1{,}230$ cubic feet less than the volume of gas in the hole, and a blowout would occur when the gas became dispersed throughout the column of drilling fluid. To preclude the danger of inducing swab action when drilling through a gas zone, circulation should be maintained for 30 minutes to one hour, with the drill pipe rotating several feet off bottom, before the first stand of pipe is slowly withdrawn. It is desirable also to resume circulation for a few minutes after the withdrawal of every third or fourth stand of pipe.

Safe Input Pressure for Flooding

I would like to know the maximum safe working pressure on an input well with hydrostatic head (figured from the surface) a water-flood with the top of the flooded sand at a depth of 375 to 400 feet. How can I calculate the safe working pressure? Can you give me the name of any publication containing information on this subject?—C. E. M.

You will find your question completely answered in an article by Frederick G. Clapp published in the June, 1935, issue of the A.A.P.G. Bulletin. Mr. Clapp had a problem of determining the extent to which artificial intake pressure may safely be raised in the water-flooding for reclaiming abandoned oil fields and he answered the question in a very complete manner in this article. Copy can be secured from the office of the American Association of Petroleum Geologists, Wright Building, Tulsa, and the volume will cost $1.50.

Considering your particular problem. The producing sand is found at a depth of 400 feet. By a simple formula wherein it is assumed that the weight of a column of fresh water 1 foot high and 1 inch square in cross section will weigh 0.433 pound, and a rock column of the same shape and size having a specific gravity of 2.6 will weigh 1.13 pounds; the maximum height of the water column is 400 feet and will weigh 174 pounds. Opposing this weight the minimum weight of the overburden will be 452 pounds, then:

400 feet, rock column, 1 inch square	452 lbs.
400 feet, water column, 1 inch square	174 lbs.
Net safe maximum artificial (intake) pressure not considering either frictional resistance to flow or structural resistance of overlying rock strata	278 lbs.

Mr. Clapp treats this problem in still another manner. Considering the rock mass overlying the reservoir pressure as being a circular plate, since the rock is not in reality an arch or a cantilever—it is a circular plate fixed around its edges. The direct way to arrive at the result is to adopt the formula used by structural engineers in the case of circular plates under uniform stress.

Fixing the circumference increases the strength of the plate, for the same reason that the strength of the beam is increased by fixing its ends, and a fixed plate can carry a load about 50 per cent greater than that carried by an unsupported one.

The unit stress a circular plate can carry varies as the square of the thickness and inversely as the square of the diameter, and (according to Kent, who quotes Grashof) for circular plates fixed at the edges and under uniform pressure on one side, the formula is:

$$p = \frac{3ft^2}{2r^2}$$

where:

- p = uniform pressure or "load" in pounds per sq. in.
- f = the "working stress" (in pounds per sq. in.) which the rock can sustain.
- r = the radius of the plate in inches.
- t = thickness of the plate in inches.

Mr. Clapp has taken 4,500 pounds as a minimum working stress for the overburden and applying this to your problem we have:

$$p = \frac{3 \times 4{,}500(400 \times 12)^2}{2 \times (2{,}640 \times 12)^2} = \text{approximately } 150 \text{ lbs.}$$

If 150 pounds is a safe figure representing the strength of materials this may be added to the net pressure figure (278 pounds) and the aggregate safe intake pressure will be approximately 428 pounds per square inch.

Luling Field, Caldwell Co., Texas

Will you please furnish me with geological data on the Luling pool, Caldwell County, Texas.—J. B. E.

We suggest that you read paper by Ernest W. Bruckş, "Luling Oil Field, Caldwell and Guadalupe Counties, Texas," published on page 256, Structures of Typical American Oil Fields, an A.A.P.G. publication.

Also see W. E. Pratt's "Oil at Luling, Caldwell County, Texas," Bulletin A.A.P.G., Vol. 7, No. 2, March-April, 1923, pp. 182-83.

Waterproofing Basement

The cement basement under our lease house leaks after heavy rainstorms. Can you suggest a simple way to stop this leak?—R. P.

From what you state and from general observation it would seem when the basement was dug a strata of earth which is quite permeable was opened. Now when it rains the water enters this soft streak of earth and travels downward toward your basement. In this way the water outside of the cement walls is under head and in a way the basement walls act as a dam.

When sufficient water has accumulated in this strata and backed up against the cellar wall some of it seeps through. There may be two kinds of movement to the water, fluid flow and movement by capillary. If fluid flow is possible the cement is full of very coarse holes, comparatively speaking, and to remedy this trouble will require that a ditch be dug close to the outside of the cellar walls and the wall exposed and thoroughly cleaned. In addition to cleaning the surface it will be well to allow the wall to thoroughly dry.

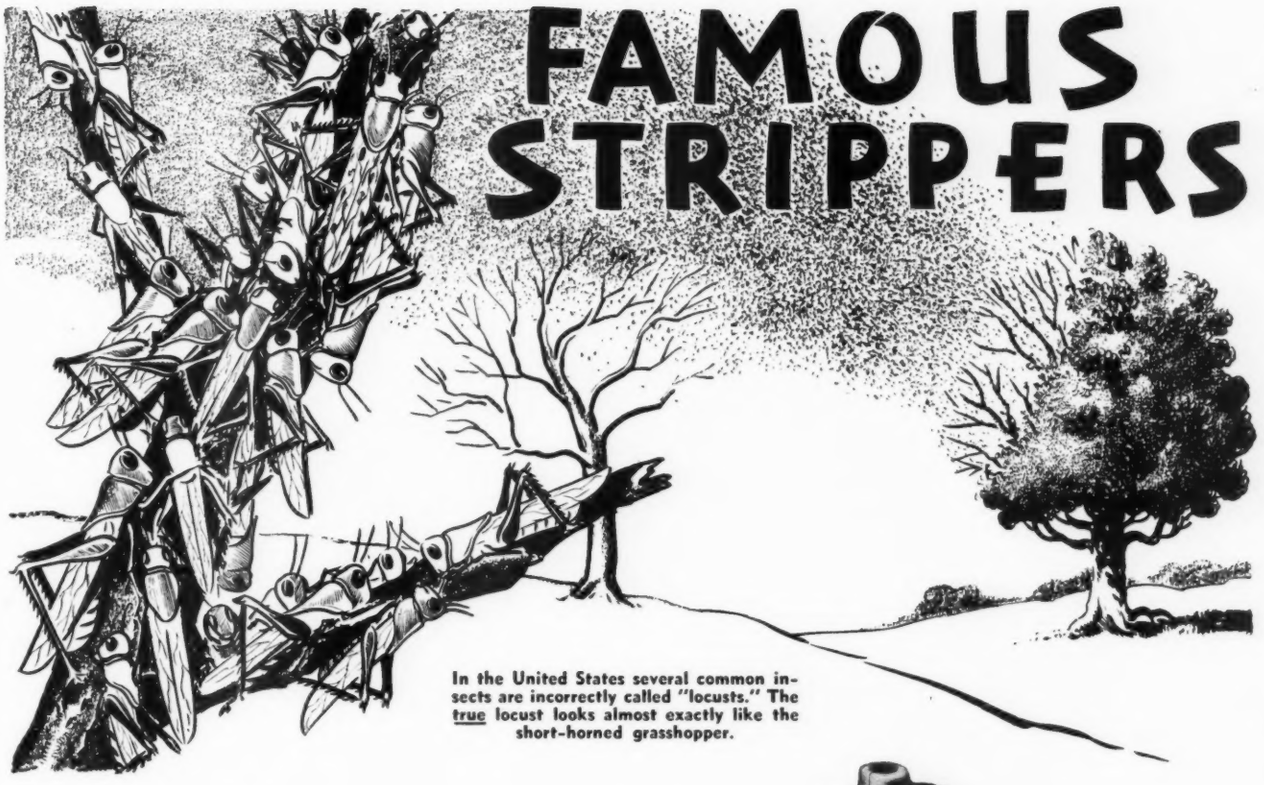
If it is possible to secure a cement gun this would be the ideal way in which to coat the outside wall of the basement with neat cement. With a cement gun the cement can be driven into the small pores and at the same time the layer of cement applied to the outside of the wall will be tight enough to waterproof the basement.

Lacking a cement gun it is suggested that a neat cement mixture be hand trowled over the wall and allowed to dry and then the surface may be coated. A bituminous or tar coating may be used or you might apply a thin paint, the object of this coating being to fill the fine pores and tiny cracks in the cement as an extra precaution against further leakage. If a thick paint is used it would tend to stretch over these tiny openings instead of penetrating them and might later crack and permit seepage.

This is not a simple job as you will note but it is the best way to remedy this trouble. Anything applied on the inside of the wall will hardly stop the leaks for it is probable that some of this water is coming through by capillary and the force exerted on the underside of a coating on the inside wall under such conditions would be so great that the coating will be forced from the wall. Any kind of coating applied to the inside of the wall must of necessity be in a relatively thin sheet and the bond between wall surface and the coating will not be very secure. When the water accumulates behind this coating the tendency will be to force the coating away from the wall and permit the water to escape. It might be possible to coat the inside wall with cement applied with a cement gun but this presents the problem of finding the cement gun and outfit which may not be as simple as digging a trench around the outside wall and making repairs on the outside where the water will tend to force the coating against the face of the wall.

You asked for a simple way to waterproof the basement. We know of none and it is our suggestion if you have occasion to build another house that you follow closely the recommendations of the cement company in preparing the concrete for the basement walls and floor for concrete that is practically waterproof can be made.

FAMOUS STRIPPERS



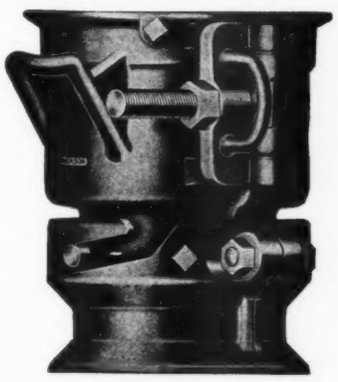
In the United States several common insects are incorrectly called "locusts." The true locust looks almost exactly like the short-horned grasshopper.

No enemy of man works with more devastating efficiency than a swarm of locusts. These insects systematically eat all vegetation from one area before moving on to the next. They strip the land absolutely clean of crops, grass, weeds . . . and frequently devour the bark on trees!

Like these "strippers" of the insect world, GUIBERSON Oil Strippers also strip clean! GUIBERSON Sucker Rods, Tubing, and Wire Line Strippers are famous for their 100% efficiency for stripping absolutely clean.

The GUIBERSON Wire Line Oil Saver and Stripper is outstanding because it has introduced an improved method of operating the main packing rubbers. One crank adjusts both rubbers simultaneously, applying equal pressure on both, packs off perfectly, and greatly prolongs life of rubbers. Hydrostatically tested for 500 lbs.

GUIBERSON Type "D" Wire Line Oil Saver and Stripper



GUIBERSON Type "C" Tubing Oil Stripper

The GUIBERSON Sucker Rod Stripper (1) Strips all oil from rods and couplings in coming out, (2) Prevents oil leakage when rods are pulled or run, (3) Protects from poison gas. Hydrostatically tested for 400 lbs.

The GUIBERSON Tubing Stripper strips all oil from the tubing as it is being pulled, and prevents gas from leaking by when tubing is run or pulled. Keeps oil and poison gas off men. Hydrostatically tested for 500 lbs.

All GUIBERSON Strippers are easily installed and are equipped with long-lived rubbers. GUIBERSON also makes Oil Savers—Types "B", "C" and "D"—which are designed for running tubing under high pressures, or for use in pressure and controlled drilling. For full details about GUIBERSON Specialties write for bulletins, or

See GUIBERSON Section, 1937 Composite Catalog

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

GUIBERSON Type "C" Sucker Rod Stripper

GUIBERSON

BETTER BE SAFE THAN SORRY

APRIL-1917

Fig. 1740 Gaso Duplex Piston Timken Bearing Power Pump. 54 to 250 Bbls.

April 6, 1917 . . . war . . . parades . . . draft boards . . . liberty loan drives. A long time ago? Yes, but many a Gaso Pump placed in service in 1917 is still delivering a full quota of service—striking proof that EXTRA strength pays EXTRA dividends in the form of EXTRA service. . . . Gaso Pump & Burner Mfg. Co., Tulsa, Okla. Export Office: 149 Broadway, New York.

Complete Gaso Condensed Catalog, in 1937 Composite Catalog

GASO PUMPS
for every oil industry need

FIELD OPERATIONS

Summarizing the Week's Developments

A wildcat being drilled by Sinclair Prairie Oil Co. south of the old Cromwell field in Seminole County, Oklahoma, had a hole nearly full of oil from Dolomite and was regarded as a certain producer. Two new deep wildcats were started in Stephens County, and one in Greer County. A new well in the Moore field, Cleveland County, had a potential rating of 24,108 bbls. of oil, with 136,000,000 feet of gas.

KANSAS

A new oil area was opened south of the Peter pool, Barton County, Kansas. A wildcat pool opener between the Cramm and Fink pools in Russell County was completed. An 8,730-bbl. well was completed in the Hauschild area, Rice County. An old well was recompleted in the Morrison area to give Clark County its second oil producer. A 2,080-bbl. well was completed in the Ellsworth County extension of the Bloomer field.

CALIFORNIA

Five miles west of Wasco in Kern County, California, a test is showing oil, but mechanical trouble may necessitate the drilling of another test to show the real possibilities of the area.

TEXAS

The discovery well in Hockley County, West Texas, flowed 114 bbls. in one hour after a three-day shut down, but deeper drilling opened up sulfur water and the hole had to be plugged back. It has not yet been acidized. The Goldsmith and Cummins pools in Ector County were brought closer together by a well that flowed 340 bbls. in three hours. Another Ordovician producer was completed in the Sand Hill pool. A test in the Rock Crossing pool in Wilbarger County, North Texas, gives indication of having opened a new deep pay zone. In Southwest Texas the new Chapman Ranch pool was extended and also shows a new pay sand. Saxet's deepest oil horizon was extended. A new pool was opened in Jackson County, Texas Gulf Coast. Production in the Heyser pool, Calhoun County, was extended.

LA.-ARK.-TEX. DISTRICT

The new Schuler field in Union County, Arkansas, the Lisbon field in Claiborne Parish, Louisiana, and the discovery of oil on the flanks of the Sugar Creek gas structure, also in Claiborne, were outstanding developments in the past week. The Marion County extensions to the Texas side of the Rodessa field do not loom as large as they did several weeks ago, when first reported. Neither well is yet a completion. North Louisiana's deepest test was abandoned at 9,986 feet. It was in Richland County. In Coastal Louisiana the South Roanoke field in Jefferson Davis Parish was proven for distillate production and a second producing sand was uncovered in Lafourche Parish.

ROCK MOUNTAIN AREA

The Archuleta field in extreme southern Colorado is promised an outlet and as it appears to be a large and prolific oil area it is expected that it will now be steadily developed.

MICHIGAN

The Buckeye field in Gladwin County, Michigan, developed a flock of new wells in the past week, the best of which started at the rate of 3,600 bbls. per day. Production of the state is mounting steadily.

Completions in All Fields

(Week Ending April 10, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade Fields	47	10	5	62	1,038	873
Lima Field	0	0	0	0	17	14
Central Ohio	4	4	5	13	238	69
Indiana	0	0	0	0	27	44
Kentucky	2	1	0	3	31	57
Illinois	0	0	0	0	14	13
Michigan	12	2	2	16	217	198
Kansas	31	1	15	47	568	384
Oklahoma	54	1	17	72	730	623
Texas:						
North Central Texas	23	0	20	43	707	694
West Texas	35	0	5	40	662	348
Texas Panhandle	6	6	1	13	169	185
East Texas	41	0	2	43	559	702
East Central Texas	7	0	3	10	180	68
East Texas border	11	3	5	19	122	10
Gulf Coast Texas	28	0	7	35	353	288
Southwest Texas	46	3	9	58	910	702
Total Texas	197	12	52	261	3,662	2,997
North Louisiana	3	0	6	9	113	164
Gulf Coast Louisiana	7	1	3	11	132	108
Total Louisiana	10	1	9	20	245	272
Arkansas	3	0	1	4	32	27
Montana	2	2	0	4	28	34
Wyoming	0	0	0	0	26	22
Colorado	0	0	0	0	6	10
New Mexico	8	1	1	10	208	127
Utah	0	0	0	0	0	4
California	18	1	6	25	371	306
Total United States	388	36	113	537	7,458	6,074
Total previous week	419	48	110	577		
Difference	31	12	3	40		

Outstanding Fields—Highlights

(Week Ending April 10, 1937)

Field—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	2	4	1	711	163	14,612
Hastings	5	8	4	1,816	155	12,780
Loma Novia	3	5	6	1,420	683	17,150
Seven Sisters	2	4	4	940	392	9,510
Saxet	2	31	4	520	399	34,400
Lopez	2	5	7	2,330	317	7,920
East Texas	47	113	41	1,472	22,454	460,697
Talco	9	46	5	1,683	268	22,700
OKLAHOMA						
Oklahoma City	5	16	4	6,731	1,107	165,425
Fitts	7	49	11	3,650	684	84,025
Olympic	2	19	11	1,003	287	15,725
KANSAS						
Ellis County	9	27	0	0	83	7,050
Reno County	7	30	4	2,900	389	21,365
Russell County	8	50	6	3,392	636	25,260
Rice County	8	51	10	7,663	770	37,460
NEW MEXICO						
Lea County	19	103	8	1,784	2,075	103,720
LOUISIANA-TEXAS						
Rodessa, La.	1	21	0	0	361	47,560
Rodessa, Tex.	3	41	7	2,673	255	45,580
Gillis, La.	0	5	0	0	57	15,354
MICHIGAN						
Porter-Yost	0	6	0	0	433	11,925
Buckeye	18	58	7	8,200	35	17,500

Hercules "Overhead Packing"

PREVENTS
breaking down of packing

PROVIDES
easy access to packing

PERMITS
repacking without disturbing hook-up!

Fig. 101—HERCULES Type "B" Forged Steel Casing Head With Slips

"Overhead Packing"—pioneered by HERCULES—makes a *big difference* in well head connections. HERCULES heads have packing *above* the slips, in a protected and readily accessible position. Advantages of "Overhead Packing" are:

(1) Seal-tight pack at all times—packing doesn't cut out;
(2) Quick pressure adjustment on packing by turning packing nut;
(3) Quick repacking of head *without disturbing well hook-up.* (Unscrew nut, change packing, replace nut)

"Overhead Packing" is not the only feature that has made HERCULES well connections famous. Note the following descriptions . . . . .

TYPE "B" FORGED STEEL CASING HEAD WITH SLIPS. (1) Completely machined inside and out; (2) Special forgings—no defects; (3) Specially designed slips that can't foul; (4) For casing reduction use smaller head on inside string; (5) Full opening. Can furnish with mandrel if desired. 7,000 lbs. test. Also furnished in Cast Steel for 3,000 lbs. test.

TUBING HANGER WITH SLIPS. (1) Three slips *completely* encircle tubing—no pinching; (2) Forged steel body will support several times weight of today's longest strings; (3) Extends only one to five inches above top of casing head; (4) Special slips can't drop into well.

UPSET PUMPING AND FLOWING TEE. *Both* regular and upset threads—screws *directly* onto regular or upset tubing; 3,000 lbs. test.

TYPE "D-5" CAST STEEL TUBING HEAD WITH SLIPS. (1) Oil saver top; (2) Special locking slips—instantly adjusted by latch; (3) Full opening. 2,000 lbs. test.

TYPE "D-4" TUBING HEAD WITH SLIPS. (1) Eliminates Berry casing head; (2) Tubing from 3″ upset to 2″ or smaller is run through head, by changing parts. 2000 lbs. test.

All HERCULES tools are built to A. P. I. standards. For details, see our new Catalog 36, or refer to HERCULES Section, 1937 Composite Catalog, Pages 797-800.

Sold Through Supply Stores

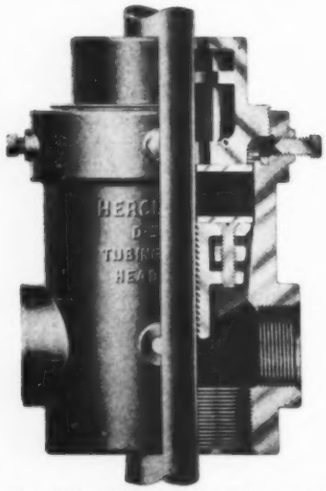


Fig. 209—HERCULES Type "D-5" Cast Steel Tubing Head With Slips (Full Opening)

HERCULES TOOL CO.

General Offices: Kennedy Bldg., Tulsa, Okla., Box 286, Phone 3-9158
District Office: Fair Bldg., Ft. Worth, Texas, Box 954, Phone 2-7028
Cable Address: HERTOCO

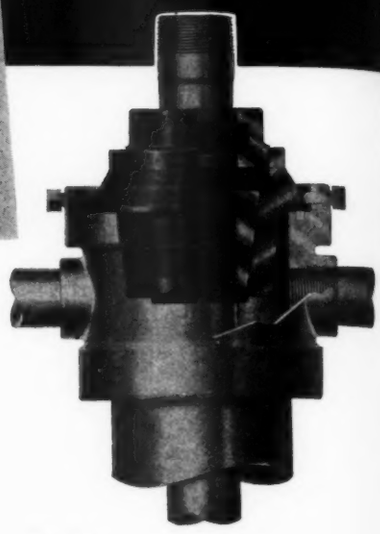


Fig. 216—HERCULES Tubing Hanger With Slips—sitting in casing head

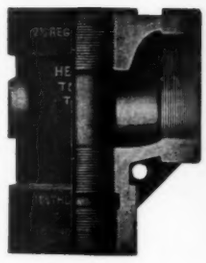


Fig. 217—HERCULES Upset Pumping And Flowing Tee

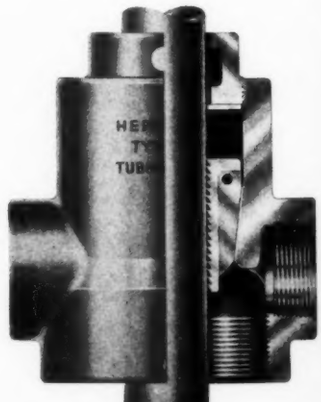


Fig. 208—HERCULES Type "D-4" Tubing Head With Slips

HERCULES
Oil Well Specialties

Southwest Texas District

By GEORGE WEBER

CHAPMAN RANCH DEEP PAY; WATER IN McCAMPBELL FIELD

CORPUS CHRISTI, Tex., April 12.—A new producing sand was added to the new Chapman Ranch field in Nueces County and the pool extended in the past week. In addition, the deepest horizon producing in the Saxet field of the same county was extended; a fourth sand showing gas and oil was cored in the La Blanca field of Hidalgo County, and two oil showings were cored in Webb County wildcats. Developments of the week were not wholly encouraging, however. In the McCampbell field of Aransas County, the new deep Frio sand, discovered last week, tested salt water. In Sweden, newly opened deep pool in southeastern Duval County, the Hiawatha No. 1 Herberger, south offset to the discovery well was abandoned after testing salt water in the field sand.

Another discovery was credited for the Seaboard Oil Corp. and I. J. Allen in Nueces County, as their No. 3 Chapman came in a producer. The test is 1,320 feet due east of No. 2 Chapman, with which the operators opened the Chapman Ranch field several weeks ago. The discovery well is producing from sand at 6,464-84 feet. No. 3 has been completed in a new sand at 5,044-56 feet. It came in making from 4 to 5 bbls. per hour on a one-eighth inch choke with a tubing pressure of 350 pounds and casing pressure of 800 pounds. In the same field, Seaboard and Allen No. 1-B Chapman is coring below 4,860 feet. The operators have moved on another location to start No. 4 Chapman, 1,320 feet due east of No. 3, and 2,640 feet east of No. 2.

Several tests are on the sand in the Flour Bluff field, and the proven area of the field is moving toward Laguna Madre, where submerged drilling is shortly to take place.

Deep Sands in Saxet

In the Saxet field of Nueces County, the deepest horizon, 6,900 feet, was the main attraction during the week. Two tests were on the sand. About 2 miles northeast of the discovery well in that sand, Republic Natural Gas Co. No. 3 Ordner, the Southern Minerals Corp. No. 5 Masten is completing, flowing into pits. The test is making 90 per cent oil on a one-eighth inch choke with tubing pressure of 875 pounds and casing pressure of 950 pounds. The sand was cored at 6,887-6,915 feet.

Another test in the field on the deep sand is Texon Drilling Co. No. 5 Vance, south of Clarkwood, 2 miles southeast of the 6,900-foot discovery well, and about 2 miles south of the Southern Minerals Corp. Masten test. No. 5 Vance cored the deep sand at 6,914-20 feet and was testing the formation.

Activity in the deeper Frio sands is strong in Saxet at present. Out of a total of 31 active tests, 10 are below 6,000 feet. Three wells were completed in the 5,800-foot Frio sand during the week. One of them, H. H. Howell's No. 3 Hutchins, was set on the 6,300-foot sand, but perforator was lost in the hole, preventing completion in the deeper sand, and the hole was plugged back to 5,750 feet.

In the northeast part of the field, Perry & Reed abandoned No. 1 fee at a total depth of 6,642 feet.

The Saxet Heights field, to the east of Saxet, and on the outskirts of Corpus Christi, gained three new wells.

Wildcatting

Wildcatting in the Aransas, San Patricio and Nueces counties is very active, with several tests already having good showings, and several others starting. North of Agua Dulce, Southern Minerals Corp. No. 1 Richard King is coring below 5,550 feet having had showings of oil at 4,000 feet and sands at other depths. In the Gregory area of San Patricio County the Eleanor Oil Co. No. 1 Green is drilling below 7,220 feet. This test also had showings of production between 6,570 and 6,600 feet and at 6,788-6,809 feet. In the same area, Phillips Petroleum Co. No. 1 Schmidt is below 6,700 feet.

In Aransas County, interest is being directed to the Barnsdall Oil Co. No. 2 Edwards, as it approaches critical depth. The test, offsetting No. 1 which blew out at 7,996 feet, is below 7,000 feet and is expected to be on the sand within a week.

In the three counties, a total of eight wildcat tests are getting under way, and the area will be an interesting one to watch for several weeks to come.

Set-Back for McCampbell

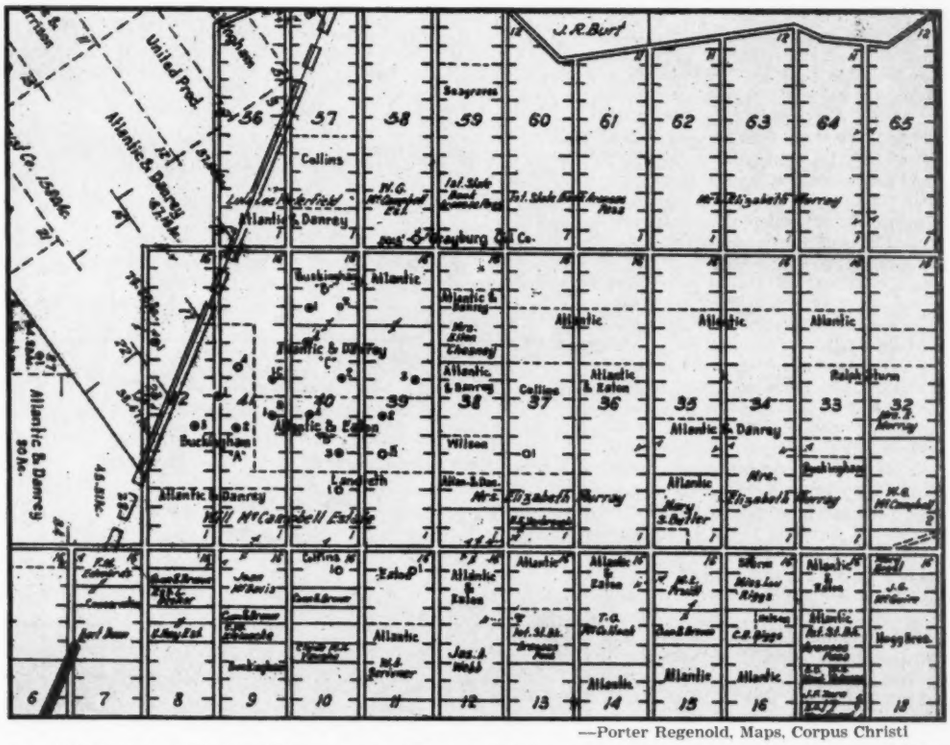
McCampbell received another set-back during the week, as the Buckingham Oil Co. No. 2-B McCampbell tested salt water in a new Frio sand section. The field test, after missing production in the regular 6,550-foot sand cored deeper and encountered a body at 7,320-7,400 feet. The 80-foot section showed indications of oil production, and after casing was set at 7,440 feet it was perforated at 7,350-60 feet making salt water. An indicated northeast extension to the field failed when Collins & Broughton No. 1 McCampbell made salt water at 6,546-58 feet. Five miles north of the field, Collins No. 1 Wheeler is starting a wildcat test in the W. S. Tuton Survey.

In the Laredo district, the new deep pool in southwest Duval County received a set-back. The Sweden field, southwest of Benavides was defined on the south by the failure of Hiawatha Oil Co. No. 1 Herberger. The test, bottomed at 5,896 feet, made salt water in the field sand at 5,862-96 feet. The east offset to the discovery well No. 1 Southland Life, was completed for a good producer.

Webb County

Two oil showings in Webb County wildcats attracted considerable attention in the Laredo district during the week. O. W. Killam cored a sand at 2,029-35 feet in No. 1 Laurel Brothers, SE cor. Block 29, Survey 333, 1½ miles north of the town of Oilton. It tested 240 feet of oil and a good blow of gas, according to reports.

Another Webb County test, Eugene Garner, Jr., No. 1 Saldivar cored a shallow sand at 1,001-06 feet which had a good odor of oil and tested two joints of oil and mud in 25 minutes on a 3-foot drill stem test. The wildcat is in Block 12, Survey 657, of the Borrego Grant. Five other outside tests are active in Webb County, and others in Duval, Zapata and Starr counties, making the Laredo district one of the most active wildcatting areas in the state.



—Porter Regenold, Maps, Corpus Christi

The McCampbell field of Aransas and San Patricio counties, one of the most active drilling fields in the section, has had two set-backs recently. A northeast outpost well after indicating an extension tested salt water. On proven acreage, the Buckingham Oil Co. No. 2-B McCampbell, in Block 40, cored a sand at 7,320-7,400 feet which indicated oil production. Tests, however showed salt water, and operators will retest

In Duval County, two tests were showing important developments. Near San Diego, the county seat, Thomas Estate No. 3 Parr tested oil and salt water at 3,952-72 feet and was drilling ahead. The well is in Survey 26, an area which has received much drilling in the past few years.

Between the Seven Sisters and Loma Novia fields, the A. J. Brinkoeter No. 1 Garcia de Rodriquez encountered sand at 2,646-56 feet which showed oil. Seven-inch casing was set at 2,639 feet, and at latest reports the test was being rigged up to pump. The

(Continued on Page 214)

California Field Report

By
L. P. STOCKMAN

CALIFORNIA ALLOWABLE CUT TO PREVENT FLOOD OF CRUDE

LOS ANGELES, Calif., Apr. 10.—Faced with the necessity of keeping California crude oil production down to a maximum of 600,000 bbls. daily the Central Committee of California Producers found it necessary to reduce the April daily quota from 600,893 bbls. to 580,000 bbls. This reduction of 20,983 bbls. which is retroactive to April 1 was found necessary when crude production exceeded 632,000 bbls. daily late last week and new wells were found to be coming in faster than anticipated. The average daily production for the week ending April 10 was 625,000 bbls., an increase over the previous week of 39,750 bbls. per day.

Continental Oil Co. is believed to have discovered a new oil field about 5 miles west of Wasco in Kern County, although the productivity of this area may not be known until at least one more well has been drilled. Continental may succeed in completing No. 1-A Kern County Land, in section 8-27-24, although mechanical conditions are decidedly unfavorable. This wildcat is one of the most important tests under way in California. Continental found it necessary to cement a string of 3-inch drill pipe and by using miniature tools attempt to develop commercial production through drill pipe. This wildcat looks exceptionally good.

Although four other wells have been drilled southeast of the wildcat, they were not drilled deep enough to prove conclusive tests. Two miles due south, Standard Oil Co. in 1935 drilled No. 8-1 in section 20-27-24 down to 5,035 feet, at which point it was abandoned. In section 34-27-24, Superior Oil Co. drilled to 8,732 feet and abandoned the test as a duster in 1936. The showings of oil and gas found by Continental Oil Co. in its Wasco wildcat are of special interest in view of the fact that the Main Oil Co. drilled two wildcats about 3 miles southeast and logged gas in substantial quantities a number of years ago. Main Oil Co. No. 1, in section 28-27-24, was practically destroyed by a gas blowout at 5,303 feet. Main Oil Co. No. 2, a few hundred feet south of No. 1, was carried down to 5,272 feet before abandonment. Approximately 7,000 feet due east of the Main Oil Co.'s two wells and a little less than 5 miles southeast of Continental Oil Co.'s Wasco wildcat, the Seaboard Oil Co. is drilling a test in section 26-27-24. The latter well, which has just passed the 5,400-foot level, still has several thousand feet to go before reaching the Continental's Wasco sand. The logs of these two wildcats should throw considerable light on the possibilities of the intervening area.

Wilmington

Six new wells were completed in the Wilmington district of Los Angeles Basin for an aggregate initial production of 5,537 bbls. and a number of additional wells are scheduled for completion within the next few days. Union Pacific Railroad, the largest holder of acreage in the Wilmington field, completed its first two new wells and both registered substantial production. Union Pacific Nos. 1 and 2, offsets to Nos. 1 and 2 Terminal of General Petroleum Corp., were brought in flowing 1,952 bbls. and 1,576 bbls. per day respectively. No. 1 was bottomed at 3,557 feet and finished with an 8⅝-inch combination string carrying 530 feet of 60 mesh perforated, while No. 2 was bottomed at 3,576 feet and finished with an 8⅝-inch combination string including 401 feet of 60 mesh perforated. This company, with 24 wells either already under way or scheduled to be started in the immediate future, has become the most aggressive operator in the Wilmington field. If this district proves to be as extensive as preliminary surveys indicate, the Union Pacific Railroad Co. will require practically two years of aggressive drilling to develop its holdings in the field.

All drilling operations undertaken in the Wilmington field up to the present time have been located within the city limits of Los Angeles, but in as much as the productive acreage extends over into the city of Long Beach it appears probable that the latter municipality will ultimately lift drilling restrictions on acreage held by the Union Pacific Railroad and a portion of the General Petroleum Corp.'s Ford Motor Co. property and the latter's terminal lease. The status of acreage underlying the Cerritos channel and the East Basin in the Wilmington field has not yet been determined, but, in view of the extended litigation involving the Huntington Beach tidelands by the state of California, Orange County and the city of Huntington Beach, some effort may be made by the city of Long Beach and the city of Los Angeles to collect royalties or fees, as this submerged land of both municipalities is susceptible and is undergoing appreciable drainage. Due to the proximity of the Wilmington field to tidewater and because of the varied interests involved, officials of the city of Los Angeles are exercising extreme care to minimize fire and nuisance hazards. George F. Getty, Inc., added two new wells during the week by completing Nos. 4-W and 6-W. The former was brought in flowing 494 bbls. of clean 19.8 gravity oil per day from 3,594 feet and the latter was brought in flowing 695 bbls. of 20.3 gravity oil daily from 3,315 feet. No. 1 MacKallister of Crail Brothers, Inc., registered an initial of 390 bbls. of relatively clean 19.9 gravity oil from 3,556 feet. Royalty Service Corp. definitely removed any doubt as to the productivity of the upper zone in the Wilmington field by completing No. 21-5-2 pumping 430 bbls. of clean 19.7 gravity oil per day from 3,052 feet. Due to the higher productivity of the second zone, discovered by General Petroleum Corp., operators have been passing up the first horizon in favor of the second, but with the completion of several additional satisfactory producing wells this horizon will receive more consideration.

El Segundo

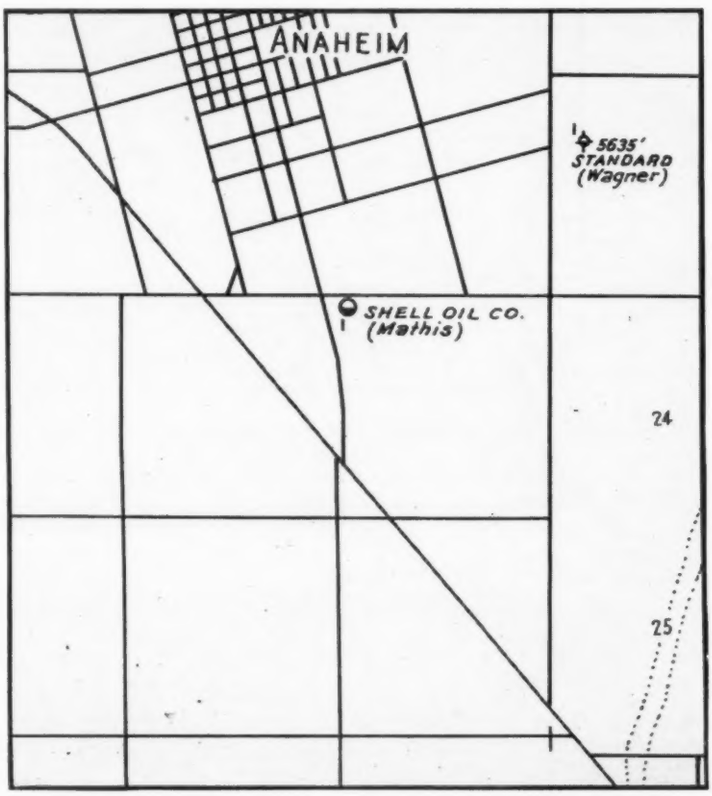
The Texas Co. No. 2-1 Johnson, in the El Segundo field of Los Angeles Basin, which was plugged back from 7,756 feet to 7,715 feet, came in flowing early in the week for a short time but subsequently died and the company is rigging up pumping equipment. No. 2-1 Johnson showed water on a preliminary produc-

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 1		March 25			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	176,726	151,541
Gasoline	116,691	16,670	.....	.....	402,703	1,534,259
Kerosene	.....	.....	.....	.....	.....	385,956
Foreign exports:						
Crude oil	314,405	44,915	425,671	60,810	3,182,409	2,146,341
Fuel oil	510,616	72,945	378,525	54,075	3,553,569	2,453,863
Diesel and gas oil	219,739	31,391	47,609	6,801	1,825,509	1,142,652
Gasoline	85,640	12,234	299,040	42,720	1,791,122	1,471,955
Kerosene	.....	.....	45,699	6,528	633,806	136,080
Other unfinished oil	.....	.....	.....	.....	179,265	6,439
Coastwise-domestic:						
Crude oil	64,918	9,274	266,386	38,055	1,499,133	1,506,946
Fuel oil	414,276	59,182	169,260	24,180	3,787,876	2,376,448
Diesel and gas oil	36,162	5,166	15,760	2,251	564,181	409,366
Gasoline	200,648	28,664	381,078	54,440	2,914,500	3,293,645
Kerosene	.....	.....	3,703	529	31,998	70,902

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	152,932	.....
Gasoline	.....	.....	.....	.....	25,778	.....
Lubricants	.....	.....	.....	.....	.....	7,608
Foreign exports:						
Crude oil	.....	.....	.....	.....	829,591	628,909
Fuel oil	42,384	6,055	32,396	4,628	399,361	1,060,040
Diesel and gas oil	61,930	8,847	143,597	20,514	872,103	144,693
Gasoline	138,031	19,719	66,647	9,521	1,466,427	717,192
Kerosene	17,649	2,521	69,027	9,861	252,035	163,707
Lubricants	71,474	10,211	11,846	1,692	234,631	73,788
Coastwise-domestic:						
Fuel oil	127,619	18,231	99,081	14,154	1,684,891	1,911,982
Diesel and gas oil	21,685	3,098	.....	.....	143,716	161,782
Gasoline	41,940	5,991	91,177	13,025	1,209,923	1,133,072
Kerosene	19,831	2,833	.....	.....	41,340	44,692



Shell Oil Co. is testing oil and gas showings in its Anaheim wildcat in Los Angeles Basin

CLARK Super-2-Angle Compressor — 2, 3, 4, and 6-Cylinder Sizes, 200 to 600 H. P.

CLARK SUPER-2-ANGLES Save Money 5 Ways YET GIVE EQUAL POWER!

The New CLARK Super-2-Angle Compressor is introducing an entirely new standard of LOW COSTS in gasoline plant installation and operation. This unit equals any other type of compressor in power and efficiency, but effects substantial savings in 5 important ways—as follows:

1. **CUTS TRANSPORTATION AND ERECTION COSTS because shipped practically assembled.**
2. **SMALLER FOUNDATION due to compact right-angle design.**
3. **LESS FLOOR SPACE. SMALLER BUILDING.**
4. **SAVES FUEL, due to CLARK Super-2-Cycle Fuel Injection.**
5. **LOWER MAINTENANCE due to extreme simplicity of design and few parts.**

Engineers throughout the industry are investigating, and important installations are already being made from coast to coast. Write for details or

See CLARK Section, 1937 Composite Catalog

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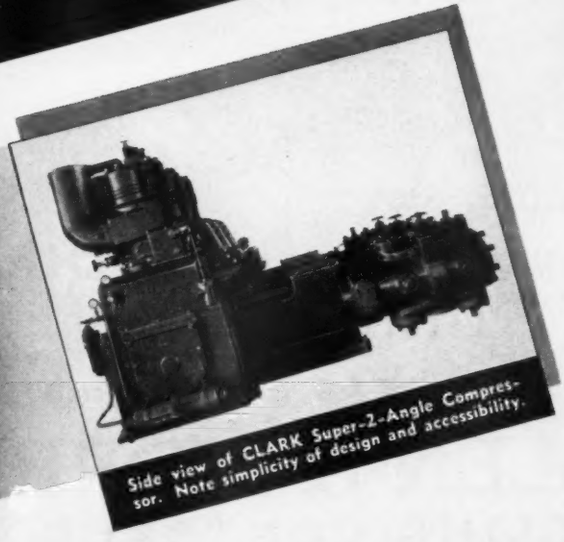


Side view of CLARK Super-2-Angle Compressor. Note simplicity of design and accessibility.

CLARK

tion test conducted a few weeks ago, but in view of recent developments should be completed on the beam as a commercial producer. This is the most easterly well in the El Segundo field. Union Oil Co. No. 1 El Segundo, the most southerly producer in the field, sanded up after showing a water cut varying between 5 and 20 per cent. The company cleaned out to the bottom but a water witch failed to indicate the exact point at which water was entering the hole. The company is making preparations to recomplete No. 1 El Segundo in order to recover the maximum amount of crude oil, as the water cut in this well might possibly be due to edge-water. In No. 2 El Segundo, the Union has been establishing an enviable record, as this potential producer spudded in March 24 has already passed the 6,700-foot level. Republic Petroleum Co. completed No. 5 El Segundo flowing 310 bbls. of 25.4 gravity oil initially from 7,383 feet. This company is rushing preparations to offset the Texas Co. No. 1 Security, the largest flowing well completed in the field since its discovery. No. 1 Security is at the present time flowing 2,646 bbls. of exceptionally clean 25.8 gravity oil and 1,150,000 feet of natural gas per day through a 20/64-inch bean under a pressure of 890 pounds on the tubing and 1,340 pounds on the casing.

Inglewood

Standard Oil Co. put two wells on production in the Inglewood field of Los Angeles Basin. No. 26 Baldwin was a recompletion and was returned to production pumping 198 bbls. of 18.9 gravity oil per day after the hole had been redrilled and deepened to the second zone at 2,070 feet and finished with an 8⅝-inch liner carrying 938 feet of perforated. No. 82 Los Angeles Investment, a new well, was brought in flowing 750 bbls. of 29.1 gravity oil and 800,000 feet of natural gas per day from 3,840 feet after the hole had been plugged back from 3,951 feet due to a gray sand which showed every indication of carrying water.

Greeley

Standard Oil Co. will be obliged to drill an additional series of wells before determining the trend and extent of the Greeley field, which it discovered in Kern County several months ago. One of the outposts, No. 11-2 in section 20-29-26, is already beyond the depth at which production was secured in the discovery well and No. 11-3 in the same section recently tested wet at 7,726 feet. Based on the limited data available, the Greeley field of Kern County appears to be located north and west of the discovery well. If this proves true, Mohawk Petroleum Co. and the Petroleum Securities Co. may succeed in developing commercial production in section 23-29-25, west of the discovery well. Standard Oil Co. started several outposts in order to determine the limits of production and the extent of the structure. These outposts have failed to result in commercial production but that does not detract from the importance of the field.

Gas Fields

In the Buena Vista gas field, Ohio Oil Co completed No. 4-A Kern County Land after redrilling and deepening the hole to 5,276 feet. The well was good for 5,000,000 feet of dry natural gas per day. In the McDonald Island field Standard Oil Co. cored the top of the gas zone in No. 3 McDonald at 5,100 feet and then cored ahead to 5,155 feet from which depth an early production test will be conducted. In the Rio Vista gas field Amerada Petroleum Corp. cemented a 7-inch water string in No. 2 Drouin at 4,275 feet preliminary to making a production test from 4,463 feet. The company made a potential test of No. 1 Mayhood, a recent completion at 4,532 feet, and the well showed a potentiality of 26,000,000 feet of natural gas daily. The next well to be started in this field by Amerada will be No. 2 Emigh in section 26-4-2.

Midway-Sunset

In the Midway-Sunset field of Kern County Standard Oil Co. No. 7-33-D in section 33-32-24 was good for 740 bbls. of oil and 10 bbls. of water per day upon completion at 3,155 feet. The oil tests 22.4 degrees and the hole was finished with a 7-inch liner including 195 feet of perforated. Union Oil Co. completed an excellent producer when No. 5 Williams was brought in pumping 669 bbls. of relatively clean 18.9 gravity oil per day from 2,050 feet after the hole had been finished with a 6⅝-inch liner carrying perforations at 1,647-1,740 feet and at 1,869-2,048 feet.

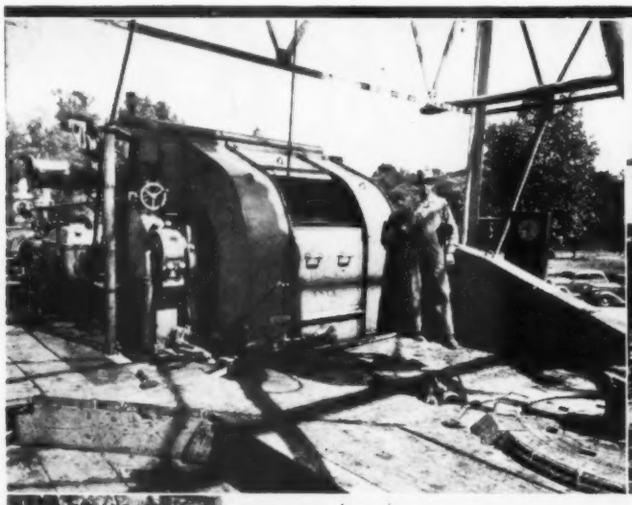
Poso-Premier

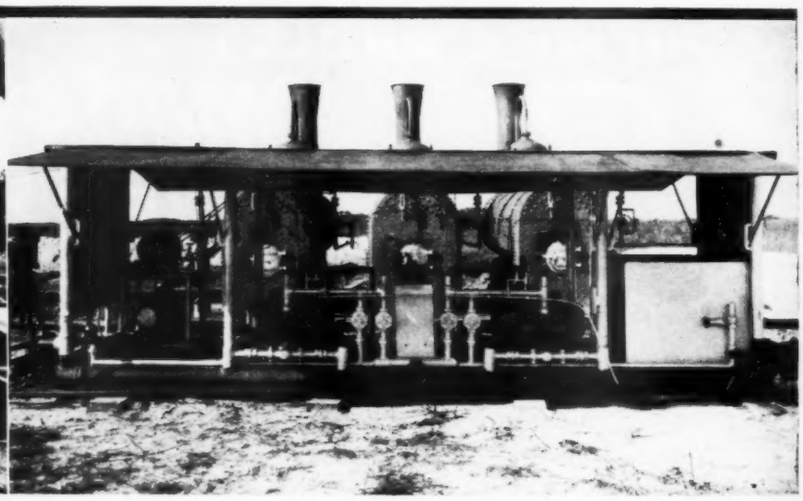
In the Premier section of the Kern River field Pebble Beach Oil Co. completed No. 4 Newhope pumping 293 bbls. of clean 17.1 gravity oil per day from 2,659 feet and Golden Bear Oil Co. completed No. 6 Grimes pumping 295 bbls. daily from 2,671 feet after the hole had been plugged back from 2,683 feet. Shell Oil Co. has mapped out a busy 60 days for its San Joaquin Valley office as preparations are under way to start five wells in the Mount Poso field and three in the Round Mountain field. Honolulu Oil Corp. is making preparations to undertake additional drilling in the Round Mountain field. Judging by the number of new locations staked the West Front of the Kern River field, Premier area, Mount Poso and Round Mountain will be rather active during the next 90 days and if we have a good summer season this work may extend well into the latter part of the year. The next few months should determine the ability of several fields to make their respective allowables and if some of them fail to show any substantial increase this will result in the drilling of numerous new wells in undeveloped acreage in other districts.

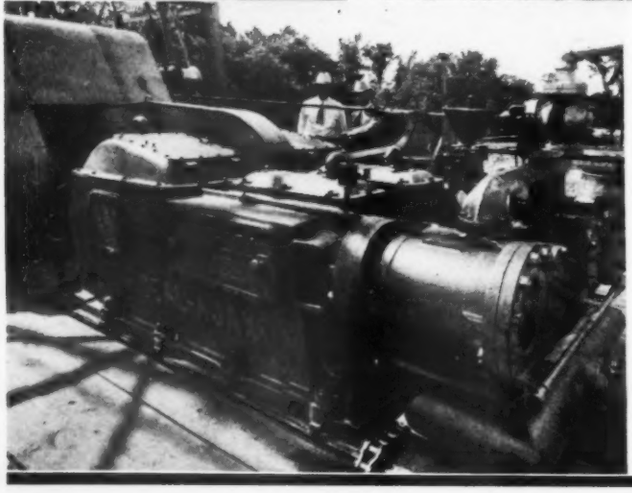
Kettleman Hills

Drilling operations in the Kettleman North dome field have shown a substantial drop during the past few months due to the fact that neither Kettleman Hills, North Dome Association (Kenda) or Standard Oil Co. are starting new wells as fast as new wells are completed. It is probable, however, that several new projects will be started within another 30 days as commitments are now being made for new wells to be drilled during the coming year. Kenda's yearly period starts in February at which time changes are made in the various colored lines enclosing different classes of acreage. During the past week Kenda completed No. 36-28-J and this new well located in section 28-21-17 was brought in flowing 2,932 bbls. of exceptionally clean 35.8 gravity oil and 1,220,000 feet of natural gas per day from 8,095 feet. The hole was finished with a 4½-inch liner carrying 327 feet of perforated. Standard Oil Co. completed No. 8-19-J in section 19-21-17 and this new well was brought in flowing

(Continued on Page 236)







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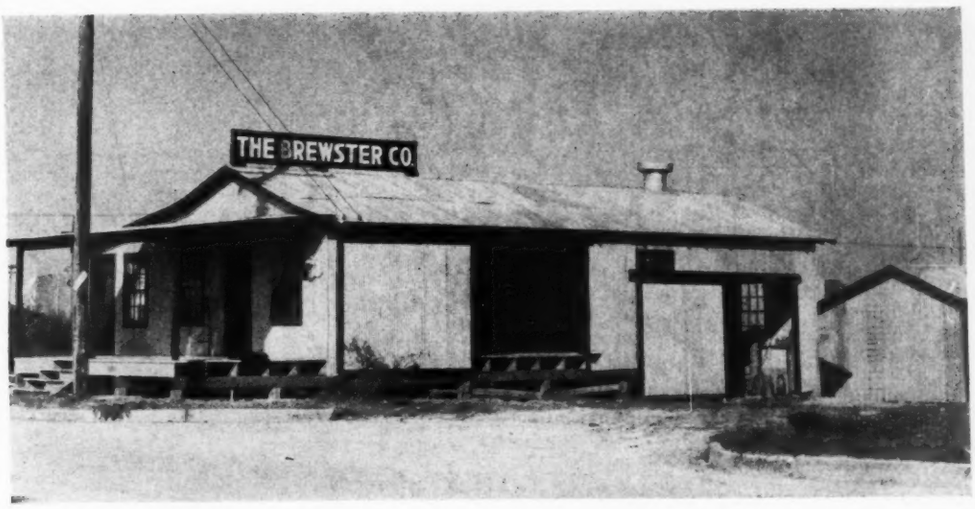

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Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Apr. 12.—In spite of a decrease in completed operations in the Central West fields in the past week, activity is steadily mounting.

Many new locations have been staked in the Illinois field this past week by major companies, but the majority of these are not made public until operations are started.

Activity in the Kentucky fields is on the increase and two new pools will play an important part in the production of that state within the next few months. A short distance from the Livermore pool another pool has been opened and 10 wells are drilling in that area at the present time. The discovery well in that section made approximately 100 bbls. a day from the Jett sand and the wells now drilling are scheduled for that sand. The new Wayne County pool, near Monticello, and northwest of the old Wayne County pool, is active and the discovery well, which started at 200 bbls. per hour, is producing about 125 bbls. a day. Approximately 25 locations have been staked in this pool and more than 18 wells are in various drilling stages.

The only completed operations in the Kentucky field in the past week were in Ohio County, however, where one gas well was brought in and three producers were completed with a total new production of 145 bbls. In the Dundee pool, New Deal Oil & Gas Co. No. 5, on the Odell heirs 165 acres, made 30 bbls. the first 24 hours after a shot. The same operators have a rig up for No. 7 and are drilling No. 6 on this farm. In the same pool, Vickers & Co. completed a test on the J. T. Edge farm as a commercial gas well. This test gauged 300,000 feet of gas after a shot. Evans, James & Hunt completed No. 4 on the Cambron heirs property, in the same pool, as a 50-bbl. producer, and the same operators are drilling No. 5 and are rigged up for No. 6. Globe Oil & Gas Co. and others No. 16, Ronnie & Hazel Graham 130 acres, had an initial production of 65 bbls. after a shot and these operators are also drilling No. 17 and rigging up for No. 18 on the same property.

CENTRAL OHIO FIELD

In the Central Ohio area there were 14 completions, and all of these were comparatively small. Moore Farm Oil Co. No. 3 Fred Moore, in section 6, Lee Township, Athens County, was shot in first Berea sand at 1,169-75 feet and is a 1-bbl. well. In section 11, Lodi Township, A. D. Townsend completed a test on the Jacob Niggemeyer property, got second Berea sand at 1,634-45 feet and an 800,000-foot gasser after a shot. In section 7, Canaan Township, C. W. Nuzum is rigged up for a test on the John Preston property.

In the same county, section 3, Rome Township, Barrows Oil & Gas Co. is moving in machine for No. 2 Pheobe Barrows. In section 1, Waterlood Township, Gross & McCune are rigged up on the Floyd Dixon property.

In Perry County, section 8, Reading Township, Hopewell Gas & Fuel Co. No. 1 Michael Emmert, which made 30,000 feet of gas naturally, was shot with 90 quarts and gauged 393,000 feet of gas 20 minutes after the shot. The well had blown down to 176,000 feet 16 hours after the shot, however, and if it does not maintain this volume it probably will be abandoned. In section 18, Clayton Township, Pure Oil Co. is building a rig on the Martha Miller property, and in section, 2 Monroe Township, Wehrle Brothers are rigged up for No. 8 Worley Deaver.

In Vinton County, section 29, Brown Township, Kelch Brothers No. 4 Mary Geiger found Berea sand at 922-33 feet, total depth. It was shot with 80 pounds of gelatine and made 3 bbls. the first 24 hours.

Hopewell Gas & Fuel Co. No. 1 Marshall Tidball, in section 20, York Township, Morgan County, drilled Clinton sand at 4,030-52 feet and gauged 900,000 feet of gas naturally.

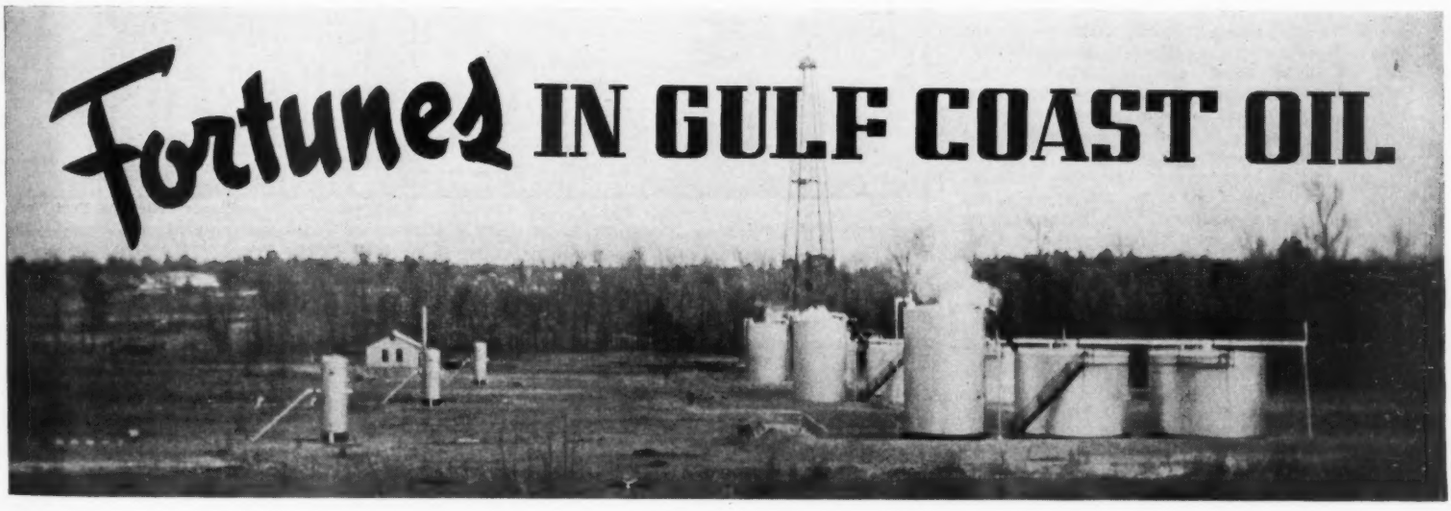
In Medina County, Lot 62, Medina Township, Harry Latshaw No. 10 Carl Miller was completed in Berea sand at 396-430 feet and made one-third barrel of oil after a shot.

Lyons & Co. No. 1 Harvey Miller, in section 25, Plain Township, Stark County, gauged 43,000 feet of gas in the Red sand at 4,720-64 feet and may be drilled deeper or shot at that depth. In section 8, Jackson Township, Ohio Fuel Gas Co. has staked a location for a test on the Alice Fashbaugh property.

In Licking County, section 1, Licking Township, Wehrle Gas Co. No. 2 John Murphy made a show of oil in sand at 732-39 feet and will be shot. No. 1 on this property was completed as a 4-bbl. producer. In section 17, Perry Township, George Vandergrift is spudding on T. R. Vanallen property; in section 2, Franklin Township, Bishop & Patten, location for No. 7, Jane Hirst property; section 3, Hopewell Township, Allen White & Co., spudding on the Caldwell & Currie properties; section 4, Maryann Township, Gail Earley & Co. No. 1 Delbert Layman, trouble with the casing at 275 feet, skidding the rig.

The Pure Oil Co. is spudding No. 5, Benton Nethers farm, in section 5, Hanover Township, Muskingum County. In section 17, Brush Creek Township, Wil-

(Continued on Page 235)



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BRANCH YARDS AT GULF COAST POINTS

East and East Central Texas

By
L. E. BREDBERG

DEEPER TRINITY STILL LURES EAST TEXAS OIL COMPANIES

DALLAS, Tex., Apr. 12.—Another company has entered the list prospecting for production below the Woodbine and from pay members of the Trinity series. Paluxy and Glen Rose. Production in the Talco and Sulphur Bluff fields in Titus, Franklin and Hopkins counties, is found in the Paluxy, upper member of the Trinity, whereas deep production in the Cayuga field (two wells) is coming from the lower member, Glen Rose. Recently a number of deep tests have been drilled in search of production from either of the deep formations, and several wells now drilling for deep pay, but so far, only three areas are paying off from the deep strata.

The Stanolind Oil & Gas Co.'s deep test will be drilled on one of the most promising geophysical highs along the Mexia-Talco fault line, just west of the town of Campbell in eastern Hunt County, where the company has a large block. Location is on the J. P. Hawks 110-acre tract in the Robert Ragsdale Survey, and the test is expected to be carried to the Travis Peak, lower member of the Trinity series, in the Lower Cretaceous Contract depth is 6,500 feet.

The company also has a large block at Commerce, the two blocks combining to cover between 12,500 and 15,000 acres along the fault, and extending northeastward into western Hopkins County, being worked extensively with geophysical instruments by the company.

This is the third deep test to get under way recently in the county, the Superior Oil Co. having abandoned a Trinity test on its Quinlan block in the southeastern part of the county when it failed to find production in either of the pay members of the deep series. The Stanolind test will be one of the most important drilled in the district in a long time due to the belief held that the area is one of the most promising to be tested in the district since the Sulphur Bluff strike along the same fault, to the east in Hopkins County.

A wildcat test 5 miles south of Alba in Wood County, started and later abandoned at 600 feet by G. W. Nix and others on the E. A. Russell farm, in the J. A. De Lap Survey, is to be carried deeper by Robertson and others. The new operators have taken over the test and are now cleaning out.

Fifteen miles east of Palestine in Anderson County, the Barnsdall Oil Co. has acquired leases on 1,540 acres to sink a test south of a block held by Humble Oil & Refining Co., and about a half mile south of a test abandoned in 1926 by the latter company. The new test will be drilled on the Swanson heirs' lands in the Richard Duty League, in what is known as the Jarvis area.

Cherokee Failure

Joe Sanders and others have abandoned No. 1 J. W. Ware, northeast of the Boggy Creek field in Cherokee County, at a total depth of 4,036 feet, after failing to find production in the Woodbine sand. Location is in the J. L. Trimble Survey.

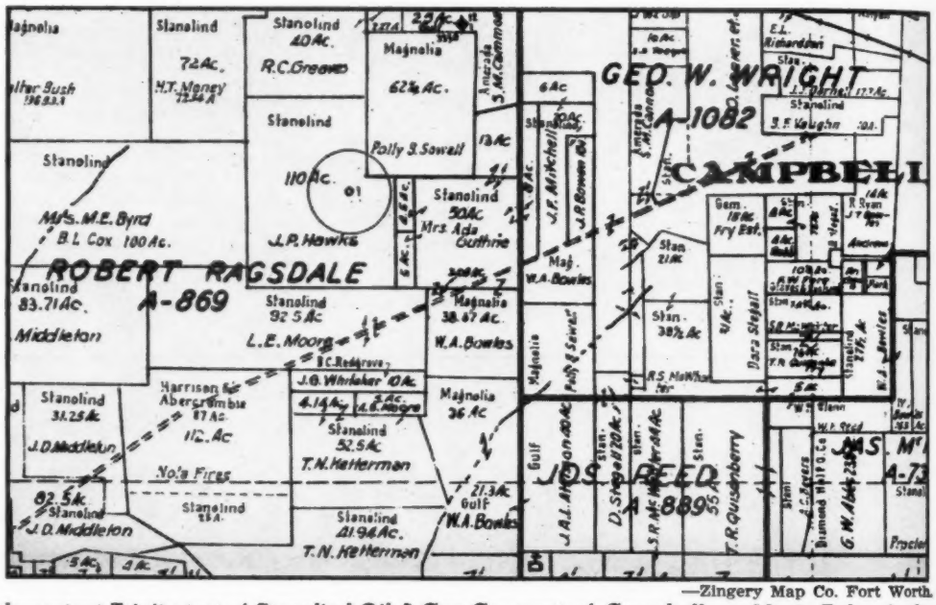
Houston County

American Liberty Oil Co. No. 1 J. A. Bean, one-half mile southwest of the gas discovery on the Grapeland structure in northern Houston County, tested 45,000,000 feet of gas and some salt water after plugging back from 6,257 feet to 6,068 feet and perforating between this and 6,018 feet. The gas flow is to be killed so that it can be plugged back still further and reperforated higher to produce the gas without any water. When the well is finished the rig will be moved to location on W. L. Moody lands to the northwest of the discovery.

Placid Oil Co. No. 1 J. T. Elliott, located on the Procella structure about 5½ miles northeast of Grapeland, in the same part of Houston County, is coring ahead at 6,075 feet, elevation 371 feet. Last week it showed some oil and water on a drill stem test between 5,870-79 feet in the Woodbine sand. This test is important, especially to the Shell Oil Corp., which holds a large block to the west and northwest that will be tested at some future date.

Blocks

Two wildcat tests are expected to be drilled on opposite ends of Henderson County as a result of two blocks, each consisting of around 1,500 acres, being taken, one in the vicinity of Chandler on the eastern side of the county and the other about 3 miles southwest of Trinidad. Maner Graham of Dallas took the former block and Leland Fikes of Corsicana and the Nemo Oil Co. of Athens, the latter.



—Zingery Map Co. Fort Worth

Important Trinity test of Stanolind Oil & Gas Co. west of Campbell on Mexia-Talco fault, Hunt County. This test will be one of the most important in the district, as the structure is considered most favorable for deep production

Red River Failures

The Carpenter Oil Co. of Fort Worth has abandoned two tests in Red River County, one on the R. E. Anderson lands 3 miles north of Clarksville at 3,019 feet, and the other on the J. M. Roberts lands in the J. Ware Survey, 10 miles northeast of Clarksville at 1,180 feet.

EAST TEXAS COMPLETIONS

Gregg County

Arkansas Fuel Oil Co. No. 10-B Lathrop, 3,587-3,612 feet, 16 bbls. in 15 minutes. Barnsdall and Sun Oil Co. No. 17 Bingham, 3,497-3,506 feet, 45 bbls. per hour. Deep Rock and Murphy No. 13 Prichard, 3,502-47 feet, 20 bbls. in 15 minutes. Fain-McGaha, Inc., No. 10 Boughnight, 3,540-91 feet, 80 bbls. per hour. Gulf Oil Corp. No. 19 Bozeman, 3,584-3,605 feet, 14 bbls. in 15 minutes. Kewanee Oil & Gas Co. No. 26 fee, 3,588-3,633 feet, 24 bbls. in 15 minutes. Stanolind Oil & Gas Co. No. 55-B McKinley, 3,606-57 feet, 50 bbls. per hour. Tide Water Associated No. 8-B Nettleton, 3,508-32 feet, 11 bbls. in 10 minutes; No. 14 Bean, 3,547-90 feet, 9 bbls. in 10 minutes.

Delta Drilling Co. No. 6 Crim, 3,557-68 feet, 68 bbls. per hour; No. 7 Crim, 3,529-30 feet, 15 bbls. in 45 minutes. Lilly Oil Co. No. 4 Dickey, 3,709-10 feet, 40 bbls. in two hours on pump. Shell Petroleum Corp. No. 14 Bates, 3,535-75 feet, 36 bbls. in one-half hour. Southport Petroleum Co. No. 4 I.&G.N.R.R., 3,546-61 feet, 29 bbls. per hour. Sun Oil Co. No. 46 Cole, 3,518-37 feet, 59 bbls. per hour; No. 28 Hilburn-Lloyd, 3,674-76 feet, 63 bbls. per hour.

Rush County

Harrison & Abercrombie No. 4-A Brightwell, 3,636-77 feet, 60 bbls. per hour through three-fourths inch choke. General American Oil Co. No. 10-A Sexton, 3,612-20 feet, 20 bbls. in 30 minutes. Gulf Oil Corp. No. 20 Florence, 3,694-3,701 feet, 20 bbls. in 22 minutes. Luling Oil & Gas Co. No. 7-A Brightwell, 3,621-49 feet, 60 bbls. per hour. Magnolia Petroleum Co. No. 11 Brox, 3,598-3,665 feet, 20 bbls. in 40 minutes. Wheelock & Collins No. 4-A Wells, 3,661-78 feet, 20 bbls. per hour. Amerada Petroleum Co. No. 31 Stovall, 3,598-3,626 feet, 20 bbls. in 30 minutes.

Atlantic Refining Co. No. 10 Arnold, 3,641-3,725 feet, 62 bbls. in six hours on swab. Gulf Oil Corp. No. 16 Stone, 3,799-3,803 feet, 20 bbls. in 26 minutes. Magnolia Petroleum Co. No. 4 Moore, 3,636-80 feet, 80 bbls. per hour. Ohio Oil Co. No. 36 Moores, 3,655-3,719 feet, 36 bbls. per hour. Stanolind Oil & Gas Co. No. 10 O'Quinn, 3,798-3,804 feet, 59 bbls. per hour. Texarkana Oil Co. No. 4 Kersh, 3,642-45 feet, dry and abandoned. The Texas Co. No. 5 Hanna, 3,635-43 feet, 20 bbls. in 40 minutes.

Smith County

Magnolia Petroleum Co. No. 13 Tyiska, 3,836-37 feet, 40 bbls. per hour. Stewart & Egan No. 6 Pace-Bateman, 3,754-55 feet, 35 bbls. per hour. Sun Oil Co. No. 1 Pace, dry and abandoned, 3,723 feet; No. 1 Sealem, 3,712-15 feet, 20 bbls. in 45 minutes. H. Wagner No. 5 Stone, 3,829-32 feet, 30 bbls. in 30 minutes. Wheelis Oil Corp. No. 14 Patterson, 3,747-48 feet, 20 bbls. per hour.

Upshur County

Humble Oil & Refining Co. No. 13 O'Bryne, 3,620-74 feet, 60 bbls. per hour. B. Manziel No. 1 Mc-

(Continued on Page 214)

Michigan Field Report

RUSH OF GOOD COMPLETIONS IN BUCKEYE, GLADWIN, AREA

By PAUL A. ELLIOTT

MUSKEGON, Mich, April 12.—Michigan's average daily production of crude oil during February at 31,600 bbls. was nearly equalled by new initial development during the month of March, chiefly in the Buckeye Township fields of Gladwin County, it was revealed in the monthly summary compiled last week showing 44 oil wells aggregating 28,920 bbls. daily.

About 75 per cent of the new production was developed in the north and south pools of the Buckeye field, soon expected to be connected as indicated by tests in the intervening stretch of about 5 miles, which recorded 21,881 bbls. initial from 18 new producers, or more than 1,000 bbls. each.

New Field

One new west Michigan oil field was opened in Salem Township, Allegan County, where a wildcat drilled by Lentz & Miller, Inc., of Muskegon, initialed about 35 bbls. daily and last week was boosted to 300 bbls. during the first 24 hours after treatment with 1,000 gallons of acid.

The Allegan well, the Lentz & Miller No. 1 Roy Raab, NW SW NW section 16-4n-13w, Salem Township, was reported producing from 200 to 250 bbls. daily as the past week closed, having settled slightly from an initial flow as high as 15 bbls. an hour from the Upper Traverse limestone.

A second test in the same township, the Muskegon Development Co. No. 1 Holthof and Sawyer, NE NW SE section 17, was expected to drill in this week on a site about half a mile west and slightly south of the Raab well.

Lentz & Miller also announced a new location for No. 1 Hardy, NW NW section 21, Salem Township, half a mile southeast of the Raab, thereby forming a triangle of the first three wells in the new field.

Buckeye Leads

Once again, as for the past five or six weeks, and probably for many weeks to come, the new Buckeye Township field, divided between a north and south sector, led the state with seven new Dundee producers making 8,200 bbls. initial in addition to the three increased by 790 bbls. through acid treatment or deepening.

The largest completion of the week was the Mammoth Petroleum Corp. No. 2 Jakab, SW NE SE section 10-18n-1w, in the north Buckeye area, which made 3,600 bbls. a day, or 150 bbls. an hour at 3,615 feet after topping Dundee lime at 3,547 feet and pay at 3,603 feet, on a lease purchased several weeks ago for $65,000 by the operating company.

The Elzie S. Beaver, Trustee, No. 1 Havens, SE NW NW section 36, same township, but in the southern section of the Buckeye field, was estimated good for 800 bbls. a day from the Dundee though exact figures were not available.

Third new producer in the township was the John F. Martin No. 1 State, NE SW NE section 13, in the northern section where it was a southeast extension test, also was estimated good for 400 bbls. a day, naturally, and probably will be acid treated.

The Double-K Trust No. 3-A State, SE NW NE section 14, which the week before was estimated good for 1,000 bbls, actually made 1,190 bbls. in 24 hours adding 190 initial when deepened to 3,636 feet. It also was to be drilled further to correspond with the structural depth of the No. 2-A State, which made 1,670 bbls. in 24 hours just north of the No. 3-A.

Garfield Petroleum Corp. No. 1 fee, NE SW NE section 14 Buckeye, flowed about 30 bbls. an hour to start and was rated good for 500 bbls. daily.

Marshall Bauman No. 1 State, SW NE SE section 2, same township, was completed for 45 bbls. daily.

Mammoth Producers & Refining Co. No. 3-A State, SW NE NW section 14, Buckeye Township, flowed 805 bbls. naturally.

McClanahan Oil Co. No. 3 Seignious, SW SW SE section 3, Clayton Township, made 20 bbls. an hour or about 400 bbls. daily on the discovery lease.

Smith & McClanahan No. 2 Brenner, NW SE SW section 11, Buckeye Township, started flowing 105 bbls. an hour in second pay gaining a rating of about 2,000 bbls. daily.

The Franklin Petroleum Investment Co. No. 1-A State, NW SE SE section 11, same township, which made 1,008 bbls. initially the week before, last week was increased to 1,400 bbls. a day at 3,605 feet, adding 300 bbls. daily in the northern sector.

Petroleum Investors, Inc. boosted the daily flow of the No. 2 Upton, SW NE NW section 36, from about 800 bbls. to 1,100 bbls., thereby adding 300 bbls. more.

The Hyatt and Norton No. 1 Campbell, SW NE NW section 12, same township, which came in with a rush making 98 bbls. in the first hour, developed water trouble and declined from an estimated initial of 2,300 bbls. a day to 270 bbls. in 24 hours. It made as high as 105 bbls. in one hour before water encroachment. Acid treatment was planned this week.

South edge of the northern Buckeye producing area was indicated when the Marshall Bauman No. 1 Thompson, NE NW SW section 14, just two locations south of the Wagner well, recently brought in for 450 bbls. a day, encountered several hundred feet of oil in the hole but failed to flow. Dundee was topped at 3,564 feet and oil struck at 3,655 feet.

On the south edge of the proved southern producing area in Buckeye, Clark and Johnson No. 1 McMahon, NE NW SW section 36, which topped Dundee at 3,485 feet and made 25 bbls. an hour to start but was virtually doubled by deepening. It was first reported in two weeks ago extending the area to the southward.

Sun Oil Co. had encountered Dundee pay sands in two Buckeye Township tests, Nos. 2 and 3 Salla, the former in SE SW SW section 11, and the latter in NE SW SW section 11. No. 2 topped Dundee at 3,541 feet and encountered oil from 3,633 to 3,637 feet and No. 3 was reported to have 1,500 feet of oil in the hole, topping the limestone at 3,536 feet and drilling to 3,616 feet. Both were to be completed this week with virtual assurance of commercial production.

Two tests in the northern part of the township, section 2, also reported oil in the hole, namely, the Marshall H. Bauman No. 1 State, SW NE SE section 2, a mile north extension which hit Dundee stratum 48 feet lower than in the Wicklund discovery well but was still expected to make a small producer, and the John S. Orr No. 1 Flandorfer, SE SE SW section 2, completing in Dundee on a nearby lease with prospects of success. The former topped the limestone at 3,593 feet and had been drilled to 3,658 feet at last report, while the latter also struck the Dundee comparatively low but was expected to add another quarter mile to the proved area.

Billings Extension

One of the most important developments of the past week was the completion by the McClanahan Oil Co. of the No. 1 Avery Estate, SW NW NW section 10-17n-1e, Billings Township, a semiwildcat about 2 miles ahead of production and to the south, which was rated at 100 bbls. a day.

Dundee was first encountered at 3,490 feet and the well swabbed 30 bbls. a day in a test at 3,620 feet. When deepened to 3,642 feet, it struck bottom water and was being plugged back to produce from the pay sands above the water.

Garfield Petroleum Corp. also was drilling in No. 1 fee, NE SW NE section 14, Buckeye Township, a mile west of the Martin No. 1-A State, and F. O. Whitelow was completing the No. 1 Fritzwater, SE SE SE section 26, in the South Buckeye area.

Thirty other tests were drilling and about 20 more were building rig, spudding or moving in, to say nothing of a host of new locations for which permits have been issued but no work yet started.

Twenty-eight of a record total of 41 permits issued for the week ended April 7 were for new tests in Buckeye where the state today is witnessing its greatest play in 12 years of oil history.

Clayton—Arenac

Although there were no new completions in the Arenac County, Clayton Township field, the Devonian Oil Co. registered a further increase of 711 bbls. in the output of the No. 1 Peavy, located a mile northwest of the McClanahan No. 1 Seignious discovery well.

Topping the Dundee at 2,413 feet and with pay first encountered at 2,425 feet, the Peavy was deepened to 2,450 feet and treated with 2,000 gallons of acid. As reported two weeks ago, it jumped to 769 bbls. a day from a natural of 425 bbls. the first 24 hours. Then for three days it steadily increased making 1,122 bbls., then 1,470 bbls. and finally 1,478 bbls. in successive 24-hour periods.

Four other tests, including two on the discovery lease, were nearing completion, while an attempted extension wildcat in Lincoln Township also was expected to test the Dundee this week. The McClanahan No. 3 Seignious, SW SW SE section 3-20n-4e, already is swabbing Dundee oil.

Crystal—Montcalm

Largest new well discovered in the Crystal field for more than a year was brought in by the Bushnell Oil & Gas Co. when the No. 1 Lott, NE NW NW section 13-10n-5w, Crystal Township, produced 1,200 bbls. initially from the Dundee, flowing 50 bbls. the first hour and was pinched in to 32 bbls. later at 3,221 feet. It is surrounded by dry holes and small wells half a mile east of previous production at the southern tip of the former big Montcalm County field. It forecasts a new play in the vicinity.

A Montcalm County wildcat, the R. E. Gallagher No. 1 H. Hayden, NW NE NE section 25-11n-7w, in Douglas Township, was dry and to be abandoned at 3,453 feet. It also struck no Marshall gas en route to the Dundee for oil.

Burnstein Oil & Gas Co. was expected to abandon No. 1 Henemeyer, SW SW SE section 26-11n-5w, Ferris Township, an outpost near the northern edge of the Crystal pool, condemned by the failure two weeks ago of the Daily Crude Oil Co. No. 1 Hollabaugh, SW SE SE section 26, Ferris Township. The Henemeyer has been shut down with pipe stuck at about 320 feet for more than a month.

Richard Hall was nearing the Dundee in his No. 1 Flint, SE SW NE section 35, Ferris Township, expected to be completed this week.

Charles Weller was drilling in the Traverse in the No. 1 Herzog, C NW SE section 12-12n-8w, a Cato Township, Montcalm County, wildcat.

C. W. Teater set 8-inch casing in No. 1 Voss, a test in the SE SE SW section 20-12n-9w, Winfield Township, near the Daily Crude Oil Co. No. 1 Weatherby, completed in the Monroe formation last December for about 40 to 50 bbls. daily and still producing 29 bbls. as the only successful oil well in an area where a considerable flow of Michigan gas was revealed two years ago in a previous wildcat.

Isabella County

Two wells in the older Mount Pleasant areas added 450 bbls. initial to the total last week, one in Denver and the other in Vernon Township.

The Denver Oil Co. brought in No. 2 Mitchell, SW SW SE section 34-15n-3w, Denver Township, for 250 bbls.

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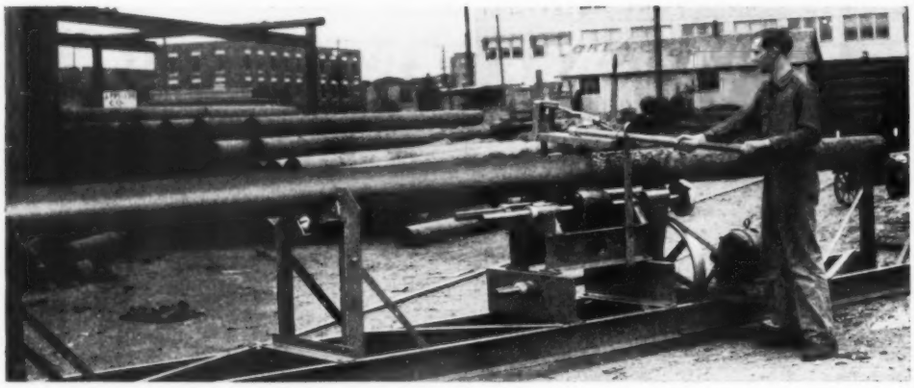

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Elmira, N. Y.

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KENNEDY
VALVES-PIPE FITTINGS-FIRE HYDRANTS

of Dundee crude daily, natural, at 3,617 feet, and operators were planning to acidize.

Wicklund Development Co., which opened the north Buckeye rush, picked up 200 bbls. a day in No. 2-B Durnin, C N half SW SW section 23-16n-4w, Vernon Township, on an old lease, topping the Dundee at 3,743 feet and completing at 3,738 feet with acid. It was immediately placed on the pump.

Socony-Vacuum Oil Co., Inc., struck a flow of about 500,000 feet of gas in the Marshall in No. 1 Murphy, C E half SE NE section 6-16n-3w, Wise Township, Isabella County, but was drilling on to test the Traverse, Dundee and possibly the Monroe oil sands.

J. W. McIntosh was nearing the Dundee in No. 2 Thayer, SW SE NW section 23, a Vernon Township test.

Fifteen tests were active in the comparatively new Sherman Township, Isabella County, area.

Chartiers Oil Co. also was nearing completion of No. 1 Fitzpatrick, C N half NW NW section 12-15n-4w, only active drilling test in Isabella Township, Isabella County, while the G-Lee-P Oil & Development Co. had cased No. 1 Grubb, NW SW SW section 2-14n-3w, likewise the lone test in the old Chippewa Township, Isabella County, field, at 3,058 feet and was drilling into the Dundee.

Midland County

Though there were no completions in Midland County last week, the Pure Oil Co. struck Dundee oil in the Iva E. Bond No. 10-A, S half SE NW section 7-13n-1w, Porter Township, and was treating it with acid for completion this week.

Rex Oil & Gas Co. reported a slight show of oil was encountered in No. 1 E. Huntoon, NW NW SE section 23, same township, edge well of the Porter field, before it was started plugging for abandonment at 3,449 feet two weeks ago. Dundee was topped at 3,394 feet.

Rex also was about ready to complete the No. 5 Howland, SW SE NW section 23, another edge test in the same vicinity. One other Porter Township test was nearing Dundee, two in Jasper and one in Greendale, while drilling operations were resumed on a Geneva Township test shut down for many months.

Ogemaw County

Ide & Glavin completed a 100-bbl. Dundee producer in the No. 2 Mahoney, SE NW NW section 19-22n-2e, West Branch Township, for the only addition to Ogemaw County production last week.

Gratiot County

A single completion in Gratiot County added 2,400,000 feet daily to the natural gas output of the New Haven Township field, now second only to the Tri-Townships field of Montcalm and Mecosta Counties in aggregate potential open flow and number of producing wells.

It was W. E. Ross No. 1 Akin, C NW NE section 9-10n-4w, completed in the Michigan Stray sand at 1,027 feet. Same operator's No. 2 Akin, C NE NE, same section, was cased at 995 feet and ready to complete this week.

After being shut down for two years, the Bila Oil Corp. resumed drilling No. 1 Ryan, SW SW SE section 32-10n-1w, a Hamilton Township, Gratiot County, wildcat at about 900 feet.

Clarence E. Bliss also started a new Elba Township test for oil, the No. 1 A. N. Palmeter, NE NW NE section 18-9n-1w.

Wildcats

A light flow of Trenton limestone gas, about 300,000 feet daily, was developed by Lee Brown in No. 1 Kehrl wildcat test, NW NW NE section 12-1s-7e, Salem Township, Washtenaw County, completed for gas at a total depth of 4,120 feet.

Dibble Brothers No. 1 Ed S. Townsend, C E half NW NW section 5-20n-7w, a Marion Township, Osceola County wildcat, struck bottom water in the Monroe formation and was to be plugged and abandoned at 4,078 feet though the drill revealed about 250,000 feet of gas at 1,750 feet and topped Dundee at 3,780 feet.

Drake Brothers were nearing completion in the Trenton of their No. 1 Truesdell, SW SW SW section 25-2s-8e, Canton Township, Wayne County, at more than 3,350 feet.

New Locations

An all-time Michigan record for new oil or gas tests was set last week when the oil and gas division of the state conservation department issued 41 permits to drill, six more than the previous record of 35 set during

(Continued on Page 223)

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THE OIL AND GAS JOURNAL
Tulsa

Among Gulf Coast Drilling Contractors

George Echols extended the Heyser field 1 mile north into Victoria County by the completion of his No. 3 Bennett, which flowed 8½ bbls. of pipe line oil through a three-sixteenths inch choke. The hole is bottomed at 5,476 feet and production was obtained by perforating the casing at 5,467-70 feet. Gas from the well will supply fuel to a new location. The field has been developed by Humble Oil & Refining Co. and Portilla Oil Co. which have done their own drilling, but new locations will probably be made in the near future by Magnolia Petroleum Co., Sinclair Prairie Oil Co. and the Gulf Oil Corp. which have acreage around the extension well. In the Gillis field, one well is being completed for the Fohs Oil Co. and the rig will be moved to another location. Other activity is reported at Flour Bluff field for the Gem Oil Co. and in the Greta field for Josey & Bruton.

O. W. Dyer, who recently moved in a string of tools to the Dickinson field in Galveston County to drill for the Atlantic Refining Co., has opened the first new production along the Upper Gulf Coast for that company by the completion of No. 1 G. O. Anderson which was completed for an initial production of 23 bbls. per hour through a quarter-inch choke. Production was obtained by perforating the casing at 8,083-89 feet. Contract has been received for No. 1 R. C. Roberts and the rig is being moved. In the meantime two rigs are operating for the same company in the McCampbell field in Aransas County.

Edwards Drilling Co. is moving in a rig to the Sandy Point field in Brazoria County for C. B. Bunte and others No. 1 Fite, an offset to the discovery well which was completed the latter part of last year. Contract depth is 6,500 feet.

Harry L. Edwards is drilling below 6,500 feet on Coast Petroleum Corp. No. 6 Maco Stewart in the Dickinson field and in the northwest extension area Diadem Oil Co. No. 2 Way, a north extension to present production, is being tested through perforated casing. A string of 6⅝-inch casing was cemented at 8,191 feet.

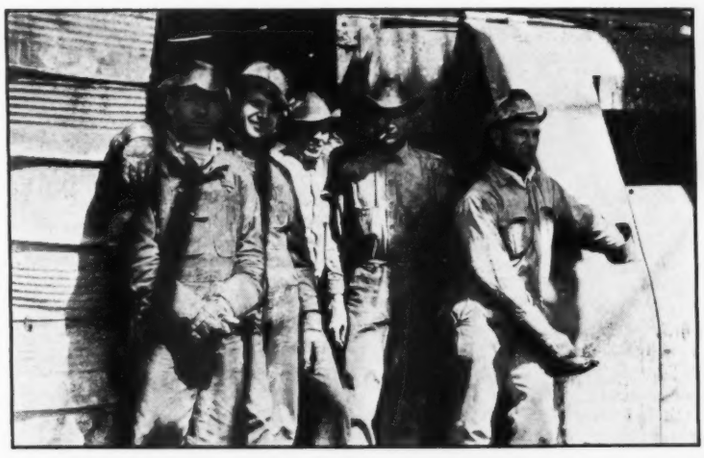
H. J. DeArman is moving in a rig 5 miles southeast of Crosby to the Crosby area, Harris County, for No. 1 Tyrell-Garth, located in the L. Heminway Survey.

Nicklos Drilling Co. opened a new producing horizon for the Valentine field in Lafourche Parish for Pan American Producing Co. by the completion of No. 2-A Harang, which flowed 26 bbls. per hour through a quarter-inch choke, with tubing pressure 720 pounds and casing pressure 770 pounds. Oil sand was topped at 5,364-90 feet. Another new sand was encountered at the company's No. 4 Harang, which is coring ahead after showing 630 feet of oil on a drill stem test at 5,405-32 feet, while a still deeper sand has been found at No. 3 Harang, which is showing gas while reaming in sand at 7,522 feet. Two rotaries are operating in the Tepetate field for the Continental Oil Co.

H. B. Jordon made a production test of Humble Oil & Refining Co. No. 1 Kirby Lumber Co., located a half mile east of production of the Segno field, Polk County, and has plugged the hole back to 5,197 feet after it showed oil and salt water when tested at a total depth of 5,202 feet. Location has been made for No. 2 Kirby and the rig will be moved in as soon as the first well is completed.

There were 41 locations reported in the Upper Gulf Coast in the past week. Six of these were made in the Amelia field in Jefferson County, three by

(Continued on Page 236)



Day tour of the Longhorn Drilling Co. of Three Rivers, Tex., which has two rigs running in the Sweden field in Duval County for the Hiawatha Oil Co. Standing left to right: C. W. McMahon, George W. Anderson, Dan Shipp, T. E. Buckaholt, and Clem Nolan (driller)

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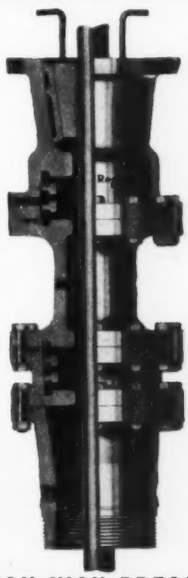

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IMPORTANT COLORADO FIELD GETS STEADY CRUDE OUTLET

By T. R. INGRAM

DENVER, Colo., Apr. 12.—The Continental Oil Co. has entered into an arrangement with the William E. Hughes Estate for the joint development of structures adjoining the Gramps No. 1 Pool in Archuleta County, Colorado. Continental has contracted for the production of the proven field. The Anderson-Kerr Drilling Co., location for a wildcat on the South Vermilion structure in Moffat County was released.

The Lance Creek field in Wyoming is to have a second test to the Tensleep by the Ohio Oil Co., and like the first it will be a mystery well.

Secretary Harold L. Ickes announced his execution of a contract for the sale of the government's royalty oil from the Lance Creek field, for one year beginning April 1. The contract provides for an estimated average premium of about 15½ cents per barrel above the present posted price in the Lance Creek field.

Montana storage oil increased and production decreased in February. Gasoline sales made a gain. Two small gas wells were completed in the Hardin field. Cut Bank had only one completion, not tested, and one new location. Kevin-Sunburst had one completion for 100 bbls. initial and two new operations.

NEW MEXICO

Six wells in the Monument area, Lea County, were completed. Other southeastern New Mexico completions included a producer in the Eunice field, two elsewhere in Lea County and a wildcat failure in Roosevelt County.

Amerada Petroleum Corp. No. 5 Byrd, C SE NW section 12-20-36, flowed 459 bbls. of oil in five hours through choke, with 3,540,000 feet of gas. It topped pay at 3,794 feet and was bottomed at 3,875 feet. Same company's No. 8 Weir, C NW NW section 35-19-36, topped pay at 3,846 feet, was bottomed at 3,960 feet, and flowed 24 bbls. of oil an hour through choke. The company's No. 6 Andrews, C SW SW section 12-20-36, had pay at 3,798 feet; total depth, 3,873 feet, and flowed 8 bbls. of oil an hour through choke.

Continental Oil Co. No. A-11-3 Sanderson, C SE SE section 11-20-36, flowed at the rate of 71 bbls. of oil an hour through choke from pay topped at 3,805 feet; total depth, 3,871 feet.

Gulf Oil Corp. No. 1-D Orcutt, C NW NE section 13-20-36, found pay at 3,777 feet, was bottomed at 3,876 feet and flowed 391 bbls. of oil naturally in 12½ hours through tubing.

Phillips Petroleum Co. No. 2 Britt, C SW NE section 18-20-37, flowed 146 bbls. of oil an hour through tubing after acid treatment. Top of pay was 3,750 feet; total depth, 3,850 feet.

Continental Oil Co. No. B-14-6 Lockhart, C SW SW section 14-21-36, Eunice area, topped pay at 3,778 feet; total depth, 3,867 feet, and flowed 25 bbls. of oil an hour through choke.

Repollo Oil Co. No. 1 Moseley, NW SW SE section 34-24-37, had pay at 3,344 feet; total depth, 3,490 feet, and flowed 270 bbls. of oil in 24 hours through tubing. It extends the Mattix area one location south.

Texas Co. No. 3-B Shepherd, SW NE NE section 5-26-37, stopped at 3,290 feet, total depth; sulfur water intruded at 3,286-90 feet; it was plugged back to 3,082 feet, casing was perforated, and it produced 3,250,000 feet of gas.

In Roosevelt County, Wirt Franklin and others No. 1 Catts, C NW NW section 28-3n-30e, was plugged and abandoned at 5,195 feet, total depth, in lime and shale.

Roland S. Bond and L. C. Harrison of Dallas, Tex., erected derrick and were rigging up rotary tools at No. 1 Hart Ranch, C NW SE section 13-2n-31e, wildcat 2 miles south of Melrose in Curry County. Nearest production in the Duggan pool, about 75 miles to the southeast in Cochran County, Texas. It is about 15 miles southeast of the Wirt Franklin and others' wildcat in Roosevelt County, recently abandoned.

[illegible]

Stanolind O. & R. Co. No. 9 State, sec. 9-19-38. Drlg. 380 ft.
Stanolind O. & R. Co. No. 7-X Thorpe, sec. 18-19-37. Drlg 3,400 ft.

Monument Area

Gulf Oil Corp. No. 2 Hatchett, C SW NW sec. 33-19-37. T.D. 3,905 ft.; cleaning out.
Gulf Oil Corp. No. 5 Anderson, C SE NW sec. 17-20-37. Drlg. 3,839 ft.
Amerada Pet. Corp. No. 4 Phillips, C NW NE sec. 1-20-36. Drlg. 3,255 ft.
Amerada Pet. Corp. No. 1-X State, C NW SW sec. 16-20-37. Drlg. 2,948 ft.
Barnsdall Oil Co. No. 8 Cooper, C SE SE sec. 12-20-36. Drlg. 3,160 ft.
Continental Oil Co. No. 16-C-1 State, C SW NW sec. 16-20-37. T.D. 3,682 ft.; set 5⅞-in. csg. 3,656 ft.
Gulf Oil Corp. No. 1 Bates, C SE SE sec. 26-19-36. T.D. 3,822 ft.; S.D. for orders.
Phillips Pet. Co. No. 1 Edna-State, C NW NW sec. 30-20-37. Drlg. 3,392 ft.
Phillips Pet. Co. No. 1 Mexico-State, C NE NE sec. 30-20-37. Coring 3,730 ft.
Repollo Oil Co. No. 4-A Phillips, NW SW sec. 31-19-37. Drlg. 3,495 ft.
Tide Water Oil Co. No. 2 Laughlin, C NE SW sec. 4-20-37. T.D. 1,300 ft.; set 9⅝-in. csg.
Amerada Pet. Corp. No. 3-V State, NE sec. 36-19-36. T.D. 3,380 ft.; set 8¼-in. csg.
Amerada Pet. Corp. No. 3-F State, SW sec. 36-19-36. Drlg. 3,188 ft.
Stanolind O. & G. Co. No. 2 Gillully, SW sec. 33-20-37. Drlg. 3,040 ft.
Shell Pet. Corp. No. 3-M State, NE sec. 1-21-36. Drlg. 3,355 ft.
Amerada Pet. Corp. No. 2-A Byrd, sec. 12-20-36. Spudded.
Amerada Pet. Corp. No. 2 Laughlin, sec. 9-20-37. Drlg. 1,014 ft.
Gulf Oil Corp. No. 6 Anderson, sec. 17-20-37. Drlg. 3,364 ft.
Gulf Oil Corp. No. 1 Bell-State, sec. 36-20-36. T.D. 3,745 ft.; set 5⅞-in. csg. at 3,740 ft.
Gulf Oil Corp. No. 2-F Bell-State, sec. 36-20-36. Derrick.
Gulf Oil Corp. No. 3-F Bell-State, sec. 36-20-36. Drlg. 3,062 ft.
Humble O. & R. Co. No. 5 Laughlin, sec. 4-20-37. T.D. 3,880 ft.; swabbing.
Humble O. & R. Co. No. 3-F State, sec. 17-20-37. Drlg. 2,430 ft.
Phillips Pet. Co. No. 1 Hudson-State, sec. 30-20-37. T.D. 1,170 ft.; set 9⅝-in. csg. 1,093 ft.
Phillips Pet. Co. No. 1 Quapaw-State, sec. 10-20-37. Drlg. 2,840 ft.
Repollo Oil Co. No. 4 Byrd, sec. 11-20-36. Drlg. 2,470 ft.
Texas Co. No. 2-K State, sec. 18-19-37. Drlg. 2,655 ft.
Amerada Pet. Corp. No. 6 Byrd, C SW SE sec. 12-20-36. Drlg. 1,056 ft.
Gulf Oil Corp. No. 1-C Kutter-State, C SE NE sec. 18-19-37. Derrick.
Gulf Oil Corp. No. 7 Anderson, C SE NE sec. 17-20-37. T.D. 257 ft.; set 10-in. csg.
Gulf Oil Corp. No. 2 Smith, C NE NE sec. 34-19-36. Drk.
Shell Pet. Corp. No. 2-E State, C NW NW sec. 13-20-36. Drlg. 270 ft.
Shell Pet. Corp. No. 4-K State, C NW NE sec. 36-20-36. R.U.R.
Tide Water Associated Oil Co. No. 1-J State, C SW NW sec. 17-19-37. Drlg. 1,360 ft.
Repollo Oil Co. No. 7 Barber, sec. 8-20-37. Killed gas at 2,616 ft.; rigging up for squeeze job.
Continental Oil Co. No. 4-B-18 Britt, sec. 18-20-37. R.U.R.
Continental Oil Co. No. 4-A-11 Sanderson, sec. 11-20-36. Drlg. 261 ft.
Gulf Oil Corp. No. 1-G Bell-State, sec. 23-21-36. Drk.
Ohio Oil Co. No. 3 Laughlin, sec. 9-20-37. T.D. 137 ft.; drlg. plug.
Ohio Oil Co. No. 1 State-Hansen, sec. 16-20-37. Derrick.
Texas Co. No. 7 Lieu-Lands, sec. 20-20-37. Drlg. 850 ft.
Amerada Pet. Corp. No. 1-A Byrd, C NE SW sec. 12-20-36. T.D. 3,600 ft.; fishing.
Amerada Pet. Corp. No. 4-F State, C SE SW sec. 36-19-36. Cellar and pits.
Amerada Pet. Corp. No. 4-B State, C SW NE sec. 36-19-36. Derrick.
Stanolind O. & G. Co. No. 3 Gillully, sec. 24-20-36. Drlg. 3,458 ft.
Repollo Oil Co. No. 3 Roach, sec. 21-20-37. T.D. 3,856 ft.; coring.

Chaves County

J. & L. Drlg. Co. No. 1 Hurd, C SE NW sec. 14-11-26. T.D. 190 ft.; cleaning out.
Elliott No. 1 State, NW sec. 16-8-23. T.D. 775 ft.; S.D. for orders.
English & Harmon No. 1 Billingslea, SE sec. 9-15-29. T.D. 240 ft.; S.D. for repairs.
Warman Oil Co. No. 1 Weldan & Hoar, sec. 9-14-25. T.D. 1,732 ft.; S.D.

Eunice Area

Getty Oil Corp. No. 1 State D, C SE NE sec. 32-20-37. T.D. 3,860 ft.; S.D. for orders.
Gulf Oil Corp. No. 4 Leonard, C SW NE sec. 22-21-36. T.D. 3,905 ft.; P.B. to 3,892 ft.; shut in.
Jim Murray No. 4 State-Wallace, sec. 3-21-36. Cellar.
Gulf Oil Corp. No. 1 Bell-Ramsey B, C SW SW sec. 29-20-37. T.D. 3,840 ft.; C.O.
Amerada Pet. Corp. No. 4-W State, C SE SE sec. 30-20-37. T.D. 3,820 ft.; acidized; to retreat.
Gulf Oil Corp. No. 12-C Arnott-Ramsey, C NW SE sec. 21-21-36. Drlg. 3,425 ft.
Shell Pet. Corp. No. 2-H State, CWL NE NE sec. 13-21-35. T.D. 3,900 ft.; running tbg.
Atlantic Ref. Co. No. 5 State L, C NW NW sec. 3-21-36. T.D. 3,845 ft.; testing.
Gulf Oil Corp. No. 2 White, C NE SE sec. 25-20-36. Drlg. 3,750 ft.
Mid-Continent Pet. Corp. No. 1 Reener, C NW NW sec. 29-20-37. T.D. 3,831 ft.; testing.
Texas Co. No. 5 State-Aggies, SE NE SE sec. 31-20-37. T.D. 3,855 ft.; to reacidize.
Tide Water Associated Oil Co. No. 1 Marshall, C SW NE sec. 13-21-36. T.D. 3,870 ft.; testing.
Continental Oil Co. No. 15-D-8 State, C SE SE sec. 15-21-36. T.D. 3,854 ft.; flowed 144 B.O. in 1 hr.
Ohio Oil Co. No. 6 McDonald, C SE SW sec. 16-22-36. Cellar.
Oil Well Drlg. Co. No. 1 State A, C NW NW sec. 16-22-36. Drlg. 3,750 ft.
Stanolind O. & G. Co. No. 1 Owen, NW sec. 3-22-37. Drlg. 1,655 ft.
Devonian Oil Co. No. 2 State, SE sec. 3-21-36. T.D. 3,769 ft.; standardizing.
Continental Oil Co. No. 30-A-4 Lockhart, sec. 30-21-36. Drlg. 100 ft.
Two States & Southern Pet. Expl. No. 3 McQuatters, C SW NE sec. 11-21-36. Derrick.
Gulf Oil Corp. No. 13 Arnott-Ramsey, sec. 21-21-36. Drk.
Humble O. & G. Co. No. 1-G State, sec. 23-21-36. Drk.
Texas Co. No. 4 Rector, sec. 30-21-36. Drlg. 1,380 ft.

Sims Area

Skelly Oil Co. No. 1 R. R. Simms C, C SE SW sec. 3-23-37. T.D. 3,388 ft.; drlg. by tools at 3,355 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 3,403 ft.; drlg. plug.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. T.D. 3,654 ft.; C.O. after shot.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 3,551 ft.; moving in standard tools.
Skelly Oil Co. No. 4 Baker, C SW NW sec. 27-22-37. T.D. 3,610 ft.; testing.
Texas Co. No. 1 Falby, C NE NW sec. 8-22-37. T.D. 3,550 ft.; waiting on cement.
Skelly Oil Co. No. 1 Sticher, sec. 4-22-37. T.D. 2,588 ft.; S.D.
Gulf Oil Corp. No. 1 Davis, sec. 8-23-37. Drlg. 125 ft.
J. E. Farrell No. 2-B Walden, C NE SW sec. 15-22-37. R.U.S.T.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. T.D. 1,015 ft.; S.D. for repairs.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-26. T.D. 3,514 ft.; S.D. for orders.
Amerada Pet. Corp. No. 3 Isabell, C SW NE sec. 15-24-36. Drlg. 490 ft.

Lea County—Miscellaneous

Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; T.D. 4,401 ft.; sulfur wtr.; P.B. to 4,391 ft. Cement did not hold; P.B. again.
Amon G. Carter No. 2 Elliott, C NE SW sec. 22-22-37. T.D. 3,622 ft.; fishing.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 24-17-34. T.D. 4,905 ft.; P.B. 4,703 ft.; acidized; swb. 103 bbls. oil in 24 hrs.; to reacidize.
Culberson-Irwin & Stovall No. 3 Stuart, NE SE SW sec. 10-25-37. Drlg. 3,022 ft.
Continental Oil Co. No. 1 Wantz, C SW SW sec. 21-21-37. Drlg. 3,817 ft.
Ohio Oil Co. No. 5 State-McDonald, sec. 16-22-36. T.D. 6,202 ft.; P.B. to 3,820 ft.; to drill plug.
Stanolind O. & G. Co. No. 1 Meyers, sec. 22-24-37. T.D. 3,553 ft.; cleaning out.
Texas Co. No. 1 Alexander, sec. 5-21-37. T.D. 3,755 ft.; averaging 30 to 40 bbls. daily.
Sun Oil Co. No. 2 Stewart, C SW NE sec. 15-25-37. T.D. 3,157 ft.; set 7-in. csg. at 3,144 ft.
Tide Water Associated Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. T.D. 3,610 ft.; cleaning out.
Shell Pet. Corp. No. 2 Black, C SW SE sec. 21-24-27. T.D. 3,477 ft.; S.D. for storage.

J. L. Perry No. 1 Elliott, SE cor. sec. 19-21-37. Drk.
Samedan Oil Co. No. 3 Hughes, sec. 4-23-37. T.D. 3,402 ft.; running csg.
Texas Co. No. 2 Black, sec. 21-24-37. Drlg. 2,968 ft.
Gulf Oil Corp. No. 1 Hardy, C SE SW sec. 20-21-37. Drlg. 3,487 ft.
Mack & Stauffer No. 1 Grizzell, C NW NE sec. 8-22-37. T.D. 3,689 ft. drlg. plug.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-25-37. T.D. 1,305 ft.; set 8¼-in. csg. 1,170 ft.
Herschback et al No. 1 Alston, C SW NE sec. 31-17-37. Wildcat; drlg. 1,766 ft.
J. C. Clower No. 2 Turner, SW SW SE sec. 29-21-37. Drlg. 3,730 ft.
Continental Oil Co. No. 4 McCallister A, C N½ NE SE sec. 24-26-36. T.D. 3,245 ft.; P.B. 3,224 ft.; to acidize.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. Drlg. 3,610 ft.
Gulf Oil Corp. No. 1 Mattern B, NE NE SE sec. 30-21-37. T.D. 3,813 ft.; testing.
Ohio Oil Co. No. 1 Grizzell, C SW SE sec. 5-22-37. Drlg. 1,735 ft.
Mid-Continent Pet. Corp. No. 1 Boren, C NE NE sec. 20-22-36. T.D. 3,700 ft.; set 6⅝-in. csg. 3,687 ft.
Stanolind O. & G. Co. No. 2 Myers, SW sec. 4-24-37. Drk.
Stanolind O. & G. Co. No. 3 Myers, SE sec. 4-24-37. Drk.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. Drlg. 739 ft.
Gulf Oil Corp. No. 2 King, sec. 28-21-37. Drlg. 2,220 ft.
Gulf Oil Corp. No. 1 Shahan, sec. 33-25-37. Wildcat; drlg. 60 ft.
Gulf Oil Corp. No. 1 Woolworth, sec. 30-24-37. Wildcat; drlg. 2,208 ft.
Repollo Oil Co. No. 2-B Stuart, sec. 10-25-37. T.D. 260 ft.; set 12½-in. csg. at 224 ft.
Maljamar O. & G. Co. No. 3 Mitchell, C SE NE sec. 20-17-32. Location.
Texas Co. No. 1 Fristoe, C SW NW sec. 35-24-37. Drk.
Stanolind O. & G. Co. No. 4 Meyers, sec. 22-24-37. Loc.
Stanolind O. & G. Co. No. 5 Meyers, sec. 22-24-37. Loc.
Magnolia Pet. Co. No. 1 Hanna, sec. 7-26-38. Wildcat; R.U.R.

Eddy County

Etz Bros. No. 3 State, sec. 16-17-30. T.D. 3,252 ft.; acidized; est. 10 bbls. oil per day; reacidized.
McGinley & Harwell No. 7 Mann, SW cor. sec. 4-18-27. T.D. 2,285 ft.; acidized; pump 3 B.O. per day.
Adams et al No. 1 Page, sec. 15-21-18. Wildcat; T.D. 100 ft. S.D.O.
Republic Prod. Co. No. 7 Russell A, NW SE NW sec. 18-17-31. Drlg. 3,396 ft.
Republic Prod. Co. No. 3 Robinson Permit, C NE NE sec. 27-17-29. Drlg. 2,780 ft.
Barnsdall Oil Co. No. 5 Dodd, sec. 22-17-29. T.D. 1,757 ft.; testing.
William Dooley No. 2 Hatchett, SW SW NE sec. 14-20-26. T.D. 80 ft.; S.D.
H. & W. Drlg. Co. No. 1 Forgarty, C SW SW sec. 14-23-29. Wildcat; drlg. 1,934 ft.
Flint Prod. Co. No. 1-B Flint, sec. 20-17-30. Drlg. 1,975 ft.
Murchison No. 1-B State, SE sec. 16-17-30. Drlg. 2,485 ft.
Carper Drlg. Co. No. 1 Gissler, NW sec. 23-17-30. Loc.
Continental Oil Co. No. 1 Barrett, NW sec. 22-20-30. Cellar and pits.
Wesley McCallister No. 1 Cagle, C NW NW sec. 8-26-30. Loc.
Repollo Oil Co. No. 1-D Parke, sec. 15-17-30. Loc.
Flynn, Welch, Inc., No. 2 Stevens, sec. 13-17-30. Drlg. 535 ft.
Neil Wills et al No. 1 Stovall-Wood, sec. 20-20-30. R.U. machine.
Carlsbad Oil Co. No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. R.U.M.

Roosevelt County

Clovis Corp. No. 2 Wilmes, C SE NE sec. 17-2s-30e. T.D. 2,881 ft.; S.D. for repairs.
Dummit Oil Co. No. 1 Todd, SE SE sec. 34-3n-29. Drlg. 175 ft.

Otero County

George Muldey No. 1 State, SW cor. sec. 11-25-8e. T.D 263 ft.; S.D.
O. K. Hearte No. 1 Hattie Evans, NW NW SW sec. 22-24-12. O.W.D.D.; wildcat; T.D. 1,951 ft.; S.D.

Curry County

Bond & Harrison No. 1 Hart Ranch, C NW SE sec. 13-2n-31. Rigging up.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc. No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. Drlg. 3,150 ft. gr. sh.

San Juan County

Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. Drlg. 210 ft.
Jack Amenda No. 4 Hart, NW NE SW sec. 25-30n-12w. Drlg. 1,785 ft.

Socorro County

R. Allen Brown, Tr. No. 1 Belen Grant, SE NW sec. 16-2n-1e. Bldg. rig.

Valencia County

C. A. Grober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. Drlg. 325 ft.; will run 12½-in.

COLORADO

Adams County

Glenridge Oil Co. No. 1 Hills, SE SE SE sec. 27-3s-64w. S.D. 4,345 ft. acct. weather.

Archuleta County

The Continental Oil Co., which recently contracted to purchase the William E. Hughes Estate's production from its Gramps No. 1 Pool in Archuleta County, just north of the New Mexico line, also will enter into active field operations in that district. An arrangement has been entered into with the Hughes Estate, of which Lafayette M. Hughes is manager, for a joint development of the adjacent structures. There are several of these which will be known as Gramps No. 1, Gramps No. 2, Gramps No. 3 and Gramps No. 4. As soon as weather conditions will permit the Hughes Estate will start a test on Gramps No. 2 for the joint account of the two companies. The location of the test has not yet been released. The Hughes Estate owns Gramps No. 1 field in fee. Both interests have acreage on the adjoining structures, some of which extend over into New Mexico. The blocking up of the acreage was completed some time ago.

The Gramps No. 1 Pool, which lies mostly in section 24-33n-2e, was developed exclusively by the Hughes Estate during the past two years with the drilling of 13 wells to the Dakota, of which two went to the top of the Morrison, finding production in eight sands in the Dakota series. Initial production of the 10 producing wells was from 500 bbls. to more than 2,000 bbls. per well per day. Depth is around 1,200 to 1,600 feet. The estate built a pipe line from the field to Chama, N. Mex., last winter, equipped the wells for pumping and is ready to place them on steady production. The Continental company will take the oil at the rail terminal and ship it in tankcars to its Denver refinery. The oil congeals at around 35 degrees and the pipe line is equipped with heaters. At present hot water is being pumped through the line and will be followed with oil heated to 200 degrees to condition the line. Shipments are expected to begin some time this month. Pipe line capacity is 4,000 bbls. per day and heater capacity 2,000 bbls.

The development of Gramps No. 1 Pool is unique among oil operations of the country. Some day the full story will be told. The estate undertook unusually exhaustive geological studies of the entire district through surface and subsurface and areal geology by forces working independent of each other. The outcome was the location of several very promising structures which have been acquired in their entirety by the estate and the Continental Oil Co.

The Gramps No. 1 Pool is one of the highest in the country. Its general surface elevation is around 8,000 feet. The producing horizon is approximately 6,800 feet above sea level. The Continental Oil Co. No. 1 Hoye, in Jackson County, has a surface elevation of 8,242 feet, but the producing horizon is only 3,367 feet above sea level. The South Park Oil Co. No. 1 State, in Park County, has a surface elevation of 9,386 feet, but principal

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GASOLINE ANTIOXIDANTS

oil showing was around 4,200 feet elevation. The highest field in the world was the Pirin, in the Department of Pano, in Peru, at an approximate elevation of 12,700 feet. It is now exhausted. A few wells produced from a shallow depth.

Huerfano County

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69w. Drlg. 3,350 ft. after lowering 5⅞-in. to bottom to S.O. cavings caused by gas; Dakota expected 3,900 ft.

Larimer County

L. D. Charboneau et al No. 1 Thompson, C NE sec. 12-4n-70w. Drlg. 153 ft.

Lincoln County

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. Drlg. 2,240 ft. in variegated sh. below Morrison; carrying 8¼-in.

Moffat County

Mountain Fuel Supply Co. No. 1 Donnell, C SE NE sec. 31-12n-97w. Drlg. 2,787 ft.

Anderson-Kerr Drlg. et al No. 1 Govt., C SE SE sec. 19-9n-99w. T.D. 1,350 ft.; W.O. 12½-in. pipe; 5 ft. snow on ground.

Anderson-Kerr Drlg. Co. No. 1 Marrs, C SE NE sec. 17-11n-100w. Bldg. rds. (first report; South Vermilion dist.).

Morgan County

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. T.D. 1,718 ft.; tstg.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 4,320 ft.; 8¼-in. at 4,300 ft.

South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. S.D. 5,705 ft.

WYOMING

Albany County

Hal Blakeman No. 1 Chapple, C NE NW sec. 33-21n-76w. C.O. to bottom at 1,681 ft.

Ohio Oil Co. No. 1 Coughlin, SW NE NW sec. 26-16n-77w. Drlg. 403 ft.

Murphy Oil Co. No. 1 Holst-Woolf, NW NW NW sec. 19-17n-76w. Drlg. 2,075 ft. in green sh.

Murphy Oil Co. No. 3 Wilson, SW NW SW sec. 18-17n-76w. Drlg. 2,816 ft. in sh.

Big Horn County

Ohio Oil Co. No. 1 Baker-Byron, SE NW sec. 23-56n-97w. Drlg. 4,768 ft.; top r.b. 4,585 ft.

Ohio Oil Co. No. 1 State, NE cor. Lot 38, sec. 36-56n-97. Deepened to 5,437 ft. in Tensleep; tstg.

Carbon County

Ohio Oil Co. No. 6 Diamond Cattle, NW NW sec. 35-20n-78w. R.U. to deepen from 2,932 ft. (first report).

Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. Drlg. 2,130 ft. in Sundance.

Ohio Oil Co.-California Co. No. 2 Kyle, C SE SE sec. 26-21n-79w. Drlg. 4,329 ft.

Ohio Oil Co.-California Co. No. 4 Union Pacific, C SW SW sec. 25-21n-79w. Drlg. 3,585 ft.

Converse County

Chadron-Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. Drlg. 3,200 ft.; slight S.G.

Wyoming Southern Oil Co. No. 2 Salisbury, NE NW SE sec. 27-32n-69w. Drlg. 269 ft.

Wyoming Southern Oil Co. No. 1 Evert, NW NW SW sec. 26-32n-69w. M.I.M.; contr. to W.P. Holman for 1,000-ft. hole if necessary.

Natrona County

Empire State Oil Co. No. 3-U, SE NE sec. 33-34n-83w. Drlg. 2,368 ft. (C.D.) in Embar.

Wyalta Oil Co. No. 4 Govt., NW NW sec. 5-29n-81w. Cmtd. 6⅝-in. on top of Sundance at 1,082 ft.; rng. 2-in. tbg. to test at 1,030-72 ft.

Wyalta Oil Co. No. 5 Govt., SW SW sec. 30-30n-81w. Drlg. 600 ft.

Niobrara County

Ohio Oil Co. No. 5 Leo OPC-16, a semiwildcat on the east side of Lance Creek, will be made into a deep test to the Tensleep. This was confirmed when the company discontinued giving out its drilling depth. Last depth released was 4,407 feet in the top of the red beds. It had the top of the basal Sundance at 4,058 feet and the elevation is 4,470 feet.

This well is 2¾ miles east of its No. 5 Converse Sheep, C SE SW section 32-36-65, which was made into a mystery well a year ago when it tested the Tensleep. No information was given out as to the results, but it was believed to have found the Tensleep below 4,600 feet and the most reliable estimates placed it at 3,000 to 4,800 bbls. per day of 40 gravity crude with only a trace of sulfur. Some estimates went up as high as 8,000 bbls. The gas was estimated at 7,000,000 to 8,000,000 feet. Tests were made at night after which it was plugged back and completed at 3,762 feet in the Sundance for 840 bbls.

Lance Creek now has more than 2,200 acres proven with reserves estimated at 35,000,000 bbls. in the Sundance horizon. No. 5 Leo would extend not only the Sundance horizon three-fourths of a mile to the east, but prove up the possible area in the deeper pay. It is understood that other operators in the field would not contribute to the cost of the deep test, not wanting to bring in surplus production at this time which would require extensive offsetting, and that the Ohio company decided to find out for itself what was below the Sundance.

Ohio Oil Co. No. 1 Leo 17, NW NW SE sec. 35-36n-65w. Rng. dk.

Ohio Oil Co. No. 6 Putnam, C NW NW sec. 4-35n-65w. Cg. 4,055 ft. in basal Sundance.

Ohio Oil Co. No. 8 Putnam, SW SE SW sec. 33-36n-65w. Drlg. 3,591 ft.

MacKinnie Oil & Drlg. Co. No. 2 Thompson, NW NW NE sec. 7-35n-65w. R.U.R.

J. M. Huber Corp. No. 1 Lamb, SE SE SW sec. 27-36n-65w. T.D. 3,540 ft.; C.O.

Riggs Oil Co. No. 2 Spaugh, SE SE SW sec. 32-34n-65w. Drlg. 1,354 ft.

Ohio Oil Co. No. 5 Leo, NW NW SW sec. 35-36n-65w. Drlg. below 4,407 ft.

Park County

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. Cg. 5,820 ft.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. S.D. 2,385 ft.; C.D.

Uinta County

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-119w. M.I.M. for cable tool test to Bear River form. at 1,600 ft.

Washakie County

Arlton & Doyle No. 1 Govt., SW SW SE sec. 29-48n-91w. T.D. 1,356 ft.; prep. to resume.

MONTANA

The Montana Oil Conservation Board is putting into effect as of April 1 the recent legislative amendatory act relating to the assessment and payment of tax and statements of oil production made to the state treasurer. The law reduces the tax from three-eighths of a cent per barrel to one-fourth of a cent and requires quarterly reports in duplicate, both mailed to the board, with the checks for the tax payable to the treasurer. There is no change in monthly requirements of reports from producers, transporters and refiners.

Storage of oil in all Montana fields at the end of February amounted to 1,328,831 bbls., an increase of 169,319 bbls. as compared with January. Total production was 412,665 bbls., a decrease of 20,305 bbls.

Gasoline sales in Montana in February amounted to 5,213,409 gallons, of which 1,904,685 gallons were im-

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ported and 3,308,724 gallons refined in the state. The total compares with 5,123,172 gallons in January.

Big Horn County

Two wells were completed in the shallow Hardin gas field for 100,000 feet per day each. These were Hardin General Hospital No. 1, CNL NE SW section 23-1s-33e, total depth 680 feet; and the Big Horn Oil & Gas Co. No. 28, NW SW SE section 14-1s-33e, at a total depth of 737 feet.

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. T.D. 3,830 ft.; installing pump to exhaust water and test oil show in Tensleep.

Glacier County

There was one completion in the Cut Bank field in Kately No. 5 Drumheller-Ward, C SE SE (Lot 4), section 10-34n-6w, at a total depth of 2,933 feet. Oil rose 125 feet from the Cut Bank sand at 2,885-2,920 feet. There was no Sunburst sand. No test has been made.

Only one new location was made.

Cut Bank Oil Trust No. 1 Yunck, SE SE SE sec. 23-34n-6w. R.O.G. (first report).
Glacier Prod. Co. No. 2 Fuller, C NW SE sec. 17-33n-5w. R.O.G.
Glacier Prod. Co. No. 2 Connolly, C SW SW sec. 6-33n-5w. Spdg.
Glacier Prod. Co. No. 1 Corrigeau, NW NW NW sec. 21-33n-5w. Spdg.
C. E. Walgren No. 2 Britton, C SE NE sec. 14-34n-6w. Drlg. 300 ft.
Texas Co. No. 1 Stufft, C NW NW Lot 4, sec. 1-35n-6w. Drlg. 2,850 ft.; Colo. 607 ft.
Santa Rita O. & G. Co. No. 1 Madison, CWL NW SW sec. 30-34n-5w. Drlg. 350 ft.
Wm. Hanlon, Agt., No. 2 All.-128, C NW SE sec. 12-32n-6w. Drlg. 2,105 ft.
Dakota-Montana Oil Co. No. 1 Tribal-136, C NE NE sec. 15-34n-6w. Drlg. 1,750 ft.
Wm. Hanlon, Agt., No. 2 All.-131, C Lot 9, SW NW sec. 7-32-5w. T.D. 2,615 ft.; fsg.
Dr. Peter Potter No. 2 All.-125, NW NE NE sec. 12-32n-6w. Drlg. 2,645 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 1,345 ft.

Pondera County

Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. T.D. 2,494 ft.; tools rec. and S.D.
Clinch Pet., Ltd. No. 1 Hollam, NW NW NW sec. 12-28n-6w. T.D. 2,200 ft.; resumed.

Phillips County

City of Malta No. 1 Govt., C SE SE sec. 18-30n-30e. T.D. 1,120 ft.; resuming; will run 6¼-in.
R. G. Parrent No. 1 Hartman, C NW SE sec. 12-24n-25e. Drlg. 885 ft.

Toole County

One completion and two new operations were reported in the Kevin-Sunburst field. The Shaver Oil Co. No. 1 Shaver, SW SE NE section 11-34n-2w, which was drilled to 1,473 feet, 3 feet in the Madison, before shutting down for the winter, was completed for 100 bbls. initial on the pump after acidizing. It is now making 70 to 80 bbls. Acid stood on the pay for several months. Locations have been made for two offsets.

Shaver Oil Co. No. 2 Shaver, SE SW NE sec. 11-34n-2w. Loc.
Shaver Oil Co. No. 3 Shaver, CSL SW NE sec. 11-34n-2w Loc.
Pfabe & Engleking No. 11 Seabrook, CSL SE SE sec. 19-35n-2w. Drlg. 920 ft.
A. E. Crumley No. 9 Fryberger, CEL NW SE sec. 24-35n-3w. Spdg.
W. S. Knight No. 1 Gunderson, SW SE NW sec. 9-35n-2w. Drlg. 1,000 ft.
A. E. Crumley No. 11-A Shaw, SE NW NE sec. 35-36n-2w. Drlg. 550 ft.
A. Beardslee No. 5 Swears, CSL SE NW sec. 9-35n-2w. Drlg. 1,600 ft.
Bryant Bros. No. 1 Lashbaugh, NE SW NW sec. 34-25n-2w. T.D. 850 ft.; R.U. heavier machine to resume.

Yellowstone County

Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. Unloading tools.
R. C. Tarrant No. 2 Sayre, NE NE SW sec. 26-3s-24e. M.I.M.

UTAH

Emery County

Standard Oil Co. of California and Continental Oil Co. No. 1-A Palm, C NW NW sec. 27-23s-11e. T.D. 1,652 ft.; prep. to resume.

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. Drlg. 6,715 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. T.D. 2,045 ft.; cmtd. 7-in. at 2,132 ft.; drlg. plug.

NEBRASKA

Sioux County

J. M. Huber Corp. and United Producers, Inc., No. 1 Morgan, C SW SW sec. 32-35n-56w. Drlg. 2,725 ft.

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Babe Ruth autographs a baseball for an admirer. 500 "Babe Ruth autographed" baseballs, 2 Nash 8's and 20 RCA Victor Auto Radios are given away every week in the Sinclair Baseball Contest.

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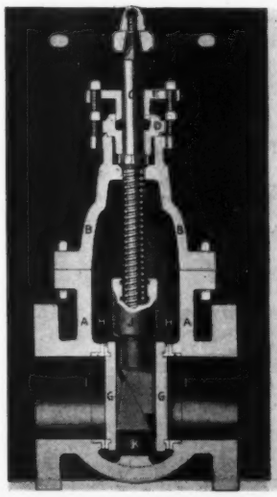

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Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-33n-50w. Drlg. 1,855 ft.; 10-in. at 1,838 ft.

Lincoln County

Smith & Wright No. 1 Hansen, C SW NW sec. 24-15n-31w. Drlg. below 1,200 ft., gr. sh.; strong O.&G. shows last 400 ft. in either Greenhorn or Carlisle; samples sent to Lincoln for correlation.

New York-Pennsylvania Gas Fields

COUDERSPORT, Pa., Apr. 12.—A new location in Steuben County, New York, was the lone new development in the New York-Pennsylvania deep sand gas fields in the week ended April 9 though two wells in Potter County are due for completion within a short time.

The new location was reported by the Belmont Quadrangle Drilling Co. on the Clara Lynch farm, 286 feet from the north line and 204 feet from the east line, in Hartville Township. Equipment is now moving in.

Pennsylvania Operations

Potter Development Co. is drilling in its well on the L. C. English farm, Harrison Township, Potter County, after running pipe to 5,096 feet. In the same township, G. L. Cabot, Inc., is running casing to 4,975 feet on the R. E. Courtwright farm. This well topped the Onondaga at 4,970 feet.

Potter Development Co. is cleaning out its well, drilled to 5,184 feet, on the Crawford estate farm, Keating Township, and Ward Wasson Co. remains shut down at 5,310 feet on the W. B. Hall farm, Genessee Township. Potter Development Co. is building the rig on the May C. Haupt farm, West Branch Township, latest of the Potter County operations.

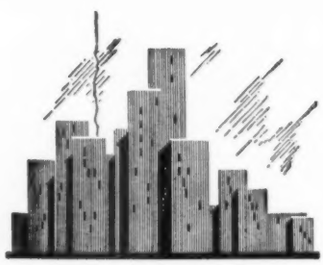
Updegraff remains shut down on location on the C. E. Erickson farm, Elk Township, Warren County, waiting for the engine. Kent Kane and others are moving in on the Government Surface property, Watson Township, same county.

All three Tioga County tests made considerable footage in the past week. Potter Development Co. is drilling at 4,295 feet on the C. G. Dearman farm, Middlebury Township, and at 3,145 feet on the H. C. Kemp farm, Farmington Township, after topping the Tully lime at 3,102 feet. G. L. Cabot, Inc., is drilling at 1,490 feet on the Union Joint Stock Land Bank farm, Brookfield Township.

New York Operations

Kaufman and others deepened their test on the Bank Angelica property, Allen Township, Allegany County, 3 feet to pass through what is believed to be the Oriskany sand at 3,380-3,384 feet. There was no show of gas. The bottom of the hole is now at 3,387 feet, where operations are shut down pending decision on whether or not to drill to the Medina. The Empire Gas & Fuel Co. is drilling at 3,590 feet on the K. Mulvey farm, Alma Township, Allegany County.

Three Steuben County tests are drilling: Atwater and others at 2,175 feet on the Herrington farm, Woodhull Township; G. L. Cabot, Inc., at 2,956 feet on the T. H. Wing farm, Greenwood Township, and Sylvania Corp. at 2,320 feet on the William Hendrickson farm, Troupsburg Township. The Atwater and others test encountered the Brown shale at 2,070 feet.



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UNITED GAS SYSTEM

East Texas Fields

(Continued from Page 206)

Gaughey, 3,715-19 feet, 40 bbls. in six hours on pump, 45 per cent water. Magnolia Petroleum Co. No. 6 Fenton, 3,770-79 feet, 20 bbls. in two hours on swab; No. 25 Hampton, 3,601-10 feet, 80 bbls. per hour. T. K. Simmons No. 2 Evers, 3,834-49 feet, 20 bbls. in two hours on pump. Stanolind and Falcon Oil Co. No. 2 Cannon, 3,598-3,600 feet, 19 bbls. in four hours on swab, 33 per cent water. Sun Oil Co. No. 18 Hargraves, 3,705-06 feet, 20 bbls. per hour.

EAST CENTRAL TEXAS COMPLETIONS

Anderson County

The Texas Co. No. 2 Woodehouse, 5,278 feet, 116 bbls. in 24 hours through one-eighths inch choke.

Cherokee County

Joe Sanders and others No. 1 J. W. Ware, dry and abandoned, 4,036 feet, NE of Boggy Creek.

Franklin County

Humble Oil & Refining Co. No. 2 Reed, 4,341 feet, 415 bbls. in 24 hours on pump.

Hopkins County

Hager & Luce No. 4 Reynolds, 4,450-4,519 feet, 37 bbls. per hour.

Red River County

Carpenter Oil Co. No. 1-R Anderson, 3 miles north of Clarksville, dry and abandoned, 3,019 feet; No. 1 J. M. Roberts, 10 miles NE of Clarksville, dry and abandoned, 1,180 feet.

Titus County

Byars and others No. 2-A Edwards, 4,297 feet, 12 bbls. per hour on pump. Byrd-Frost, Inc., No. 1 Hargrove, 4,181-4,251 feet, 68 bbls. in eight hours on pump. Humble Oil & Refining Co. No. 29 King, 4,205-4,325 feet, 262 bbls. on pump. Yandel Rogers No. 1 Church of Christ, 4,282-4,349 feet, 650 bbls. in 48 hours on pump.

Southwest Texas Fields

(Continued from Page 199)

test was drilled as a "mystery" and information is scarce concerning it.

Two fields were extended during the week in Goliad and Bee counties. In the former, Dirks Brothers No. 1 Allen was brought in for an initial production of 125 bbls. per day, from sand at 4,394-4,404 feet. The new well in the Slick field is a few hundred feet southeast of the George B. White No. 4 Poetter, which revived activity in the field.

In Bee County, the newly discovered Strouch field was extended by Dirk Brothers, its discoverer, when No. 2 Strouch came in making 150 bbls. per day at total depth of 4,290 feet. The crude in the new field averages 45 gravity.

The Lower Rio Grande Valley has several interesting tests. The most important during the past week seemed to be Sterling Oil & Refining Co. No. 1 Engleman, which cored another sand section at 7,984-8,012 feet and was setting casing at 7,984 feet. The test is located in the LaBlanca area. The Samfordyce field will shortly get several new tests, according to reports of a large number of new locations in the field.

Kansas Developments

By
DAL DALRYMPLE

WILDCAT FINDS OIL IN NEW AREA SOUTH OF PETER POOL

A new producing area 1¼ miles south of the Peter pool in Barton County has been opened at Indian Territory Illuminating Oil Co. No. 1 Schrepel, SE SE NE section 26-20-11w, wildcat. It is though to be an extensioner of the Peter pool, although temporarily classed as a pool opener. On 24-hour pumping test it made potential of 1,450 bbls. of oil, producing from Siliceous lime at 3,295-3,325 feet, total depth.

Intervening acreage between the new well and the Peter pool is owned by Indian Territory, Atlantic, Lario and Gulf companies. An east offset to the discovery well is to be started by the Indian Territory company, and a south offset by Shell Petroleum Corp.

Another well of gusher proportions was near completion in the Hauschild district, southern Rice County. Derby Oil Co. No. 6 Thode, SE cor. section 8-21-7w, was rated as an 8,732-bbl. well, based on a six-hour yield of 2,304 bbls., making it one of the largest producers to be drilled in Rice County. It topped Conglomerate at 3,357 feet, and was bottomed at 3,369 feet.

Carter Oil Co. No. 1 Staab NE NE NW section 11-12-18w, which extended production in the Walters pool, Ellis County, one-fourth mile south, made potential of 900 bbls. of oil on a test during which pumping equipment was down from four to six hours. Gravity of the oil was 27.5 at 74° F. Top of Siliceous lime was 3,615 feet; total depth, 3,621 feet. It is the Carter company's first test on a block brought from George H. Bruce, W. M. Lassen and C. C. James some months ago.

Rice County again led Kansas in matter of completions, with 10 producers and 4 failures. A wildcat producer opened a new area in Russell County. A large producer was completed in the Ellsworth County sector of the Bloomer pool. An old well in the Morrison area was recompleted to give Clark County its second oil well.

Rice County

Ten of 14 wells completed in Rice County, setting a fast pace for other Kansas counties in the matter of completions and field activity, were oil producers. Two of the four failures were wildcats.

Four of the new producers were in the busy Hauschild-Saxman-Theede district. The largest was Atlantic Refining Co. No. 1 Hughes B, SE SW SE section 6-21-7w, which had potential of 4,196 bbls. of oil after flowing 1,107 bbls. in six hours. Production was from Conglomerate at 3,325 feet; total depth, 3,328 feet. Same operator's No. 2 Patton A, NW NW NE section 7-21-7w, topped Conglomerate at 3,335 feet, was bottomed at 3,348 feet, flowed 170 bbls. of oil in six hours and made potential of 644 bbls. Garden-Haines Oil Co. No. 1 Gossman, SW SE NW section 9-21-7w, flowed 747 bbls. of oil in six hours and made potential of 2,831 bbls., from Conglomerate at 3,355 feet; total depth, 3,365 feet. Same operator's No. 2 Theede, NW NE NW section 14-21-7w, made potential of 1,141 bbls. of oil from Conglomerate at 3,375 feet; total depth, 3,391 feet.

In the Silica field, Stanolind Oil & Gas Co. No. 13 Specht, NE NW SE section 6-20-10w, had Siliceous lime at 3,302 feet, was bottomed at 3,311 feet, swabbed 246 bbls. of oil in two hours; was acidized and made potential of 2,385 bbls. Gulf Oil Corp. No. 5 Wendell, NW SW SE section 32-19-10w, made potential of 1,335 bbls. of oil after acidizing Siliceous lime at 3,284 feet; total depth, 3,300 feet. Republic Natural Gas Co. No. 7 Wendell, NE cor. section 32-19-10w, had Siliceous lime at 3,277 feet; total depth, 3,285 feet, and made potential of 1,891 bbls. J. H. Tatlock No. 4 Berscheit A, NE SW SW section 6-20-10w, pumped 88 bbls. of oil in four hours after acidizing Siliceous lime at 3,285 feet; total depth, 3,291 feet. Same operator's No. 7 Berscheit B, SW NE SW section 6-20-10w, had Siliceous lime at 3,287 feet; total depth, 3,306 feet; and pumped 856 bbls. of oil in 24 hours.

National Refining Co. No. 8 Sherman, SE NE SW section 16-19-9w, Chase area, topped Siliceous lime at 3,193 feet; was bottomed at 3,230 feet; made potential of 82 bbls. of oil in 24 hours; acidized and made potential of 47 bbls. Saco Oil Co. No. 1-A Sharp, NE SE NE section 13-20-10w, topped Siliceous lime at 3,321 feet; at 3,333 feet oil rose 250 feet in the hole in four hours, but water increased and it was abandoned at 3,342 feet, total depth.

R. E. Day and others No. 1 Mansz, SW SE SE section 21-21-7w, Ponce area, was abandoned at 2,150 feet.

Wildcats Are Dry

Roy Ramsey and others No. 1 Malone, NW NW NE section 1-20-10w, wildcat, topped Kansas City lime at 2,962 feet; Simpson, 3,278 feet; Conglomerate, 3,269 feet; Siliceous, 3,298 feet; had a hole full of water and was dry and abandoned at 3,310 feet, total depth. Oil showed at 3,298-3,300 feet.

Manning & Martin and others No. 1 Mathes, SE SW NE section 27-21-8w, wildcat south of Sterling, topped Topeka lime at 2,460 feet; Kansas City, 2,945 feet; Conglomerate, 3,323 feet; Viola, 3,584 feet; Simpson, 3,645 feet; had Siliceous lime at 3,685-3,710 feet, total depth; water intruded and it was abandoned.

New work in Rice County: Bell Oil & Gas Co. No. 11 Bayer, SE cor. section 29-19-10w, location; Gulf Oil Corp. No. 1 Steckel, C W half SE SW section 30-19-10w, building rotary rig; Texas Co. No. 1 Hathaway, NW NE NW section 34-19-10w, location; same company's No. 6 Kleile, NE SW SW section 34-19-10w, rig; same company's No. 7 Kleile, SW SE SW section 34-19-10w, cellar; same company's No. 18 Schoonover, SE SE NW section 6-19-9w, cellar; Comanche Oil Co. No. 1 Cramm, SW SW SE section 15-19-9w, wildcat, 1 mile east of Chase, location; Rose & Son No. 2 Callis, C S half S half SW section 32-19-9w, building rig; Mid-Continent Petroleum Corp. No. 6 Wood, NW NW NE section 4-20-10w, location; Hipple and others No. 1 Wernet, NE NW section 11-20-6w, wildcat, building rig; Atlantic Refining Co. No. 1 Hopkins, SE SE SW section 6-21-7w, moving in material; same company's No. 2 Hughes B, SW SE SE section 6-21-7w, building rotary rig; same company's No. 1 Patton D, NE NE NW section 7-21-7w, building rotary rig; Grace Oil Co. No. 2 Gossman, NE SE NE section 8-21-7w, drilling at 1,975 feet; L. E. Douglass Oil & Gas Co. No. 5 Theede, SE SW SW section 9-21-7w, cellar; same operator's No. 8 Theede, NE NW SW section 9-21-7w, cellar; same operator's No. 9 Theede, NW NE SW section 9-21-7w, rigging up rotary.

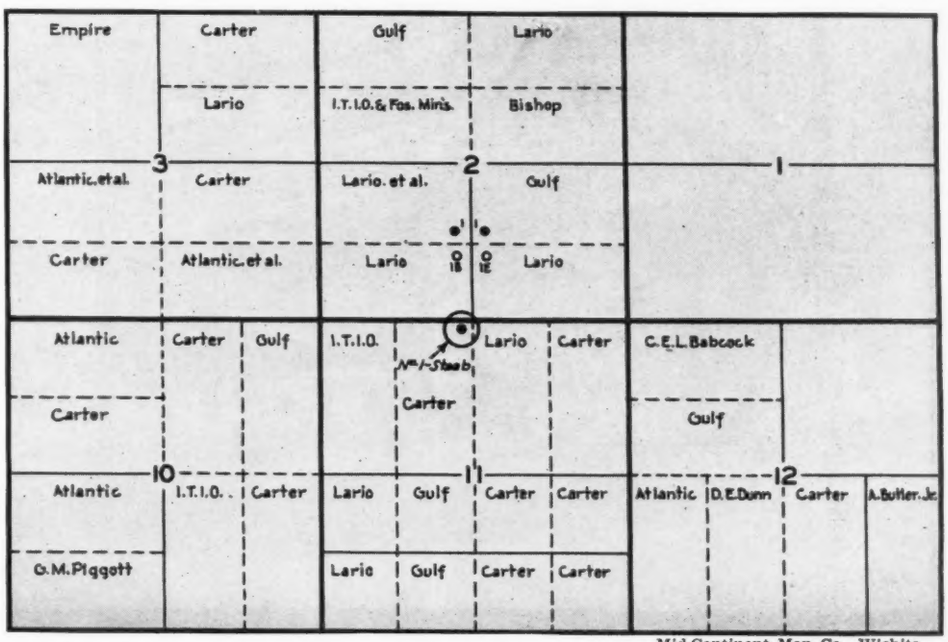
Russell County

A discovery wildcat was completed at Empire Oil & Refining Co. No. 1 Vaughn, SW cor. section 17-14-14w, between the Cramm and Fink areas in Russell County. It flowed 85 bbls. of oil in one hour after acid treatment, and pumped 1,482 bbls. of oil, with 5 per cent water, in 22 hours. Top of anhydrite was 835 feet; Kansas City lime, 3,004 feet; total depth, 3,034 feet.

Largest of three wells completed in the Trapp field was Phillips Petroleum Co. No. 5 Hoffman, SW NE SE section 31-15-13w. It topped Siliceous lime at 3,348 feet; was bottomed at 3,351 feet; swabbed 600 bbls. of oil in 12 hours; acidized and made potential of 2,635 bbls. Empire Oil & Refining Co. No. 2 Sellens, SE SW SW section 30-15-13w, had Siliceous lime at 3,265 feet; total depth, 3,271 feet; pumped 420 bbls. of oil in 10½ hours; acidized and made potential of 2,305 bbls. W. I. Southern, Inc., No. 6 Boomhower, NE SE NW section 32-15-13w, was acidized and made potential of 960 bbls. of oil from Siliceous lime at 3,299 feet; total depth, 3,303 feet.

Carter Oil Co. No. 2 Detrich, SE SW SW section 8-15-13w, Coralena area, topped Topeka lime at 2,595 feet; total depth, 2,862 feet; acidized at 2,853-62 feet and made potential of 257 bbls. of oil.

In the Hall pool, Empire Oil & Refining Co. No. 1 Hickey, SE cor. section 25-14-14w, topped Kansas City



—Mid-Continent Map Co., Wichita.

The Walter pool, Ellis County, was extended one-fourth mile south at Carter Oil Co. No. 1 Staab, section 11-12-18w

lime at 2,857 feet; was bottomed at 2,970 feet; acidized with 8,000 gallons and made potential of 1,070 bbls. of oil, with 1 per cent water.

First reports of new work in Russell County: Texas Co. No. 1 Brandenburg, NW cor. section 20-14-14w, south of the No. 1 Vaughn discovery well, was building rig; Aylward and others No. 1 Jones, SE SE NW section 22-14-13w, wildcat, was moving in material; R. H. Shields and others No. 1 Letsch, NE NE SE section 27-14-13w, was moving in material; Stearns & Streeter No. 4 Miller, NE SE NW section 31-14-13w, rig; Empire Oil & Refining Co. No. 1 A. H. Glad, SW NW SW section 10-15-13w, location; Gulf Oil Corp. No. 2 Hoffman, SE NE SW section 31-15-13w, moving in material; Phillips Petroleum Co. No. 9 Hoffman, NW SW NE section 31-15-13w, cellar; Central Petroleum Co. No. 1 Novak, NE NE SE section 6-13-15w, Fairport area, was a location.

Barton County

Magnolia Petroleum Co. No. 1 Rossler, NE NE NW section 1-18-11w, Bloomer field, Barton County, swabbed 320 bbls. of oil in five hours and made potential of 1,339 bbls. Production was from Siliceous lime, topped at 3,262 feet; total depth, 3,282 feet.

On the Barton County side of the Silica field, Helligoss and others No. 8 Isern, NE SE NE section 12-20-11w, had Siliceous lime at 3,317-21 feet, total depth, and made potential of 647 bbls. of oil in 20 hours.

In the Winget area, Texas Co. No. 1 Wagner, NE cor. section 22-16-16w, topped Kansas City lime at 3,251 feet; total depth, 3,272 feet; plugged back to 3,258 feet; acidized and made potential of 491 bbls. of oil, with 100 bbls. of water.

Sinclair Prairie Oil Co. No. 2 Davidson, NW SE SE section 4-16-11w, Davidson pool, topped Gorham sand at 3,316 feet; had Conglomerate at 3,356 feet, total depth, and made potential of 150 bbls. of oil, with 12 bbls. of water.

S. L. Parks No. 1 Peach, SE cor. section 24-16-14w, wildcat, topped Kansas City lime at 3,190 feet; had a showing of oil and water at 3,255-59 feet; slight showing of oil at 3,318-21 feet; topped Siliceous lime at 3,432 feet; had a hole full of water at 3,440-43 feet, total depth, and was dry and abandoned.

New operations reported in Barton County were as follows: Republic Natural Gas Co. No. 3 McLean, NW NE SE section 25-17-11w, Bloomer area, location; Texas Co. No. 6 Moran, NW SE SW section 25-17-11w, set casing at 214 feet and waiting on cement; Yarnell, Spencer & Carlson No. 4 Bloomer, NW NE NW section 36-17-11w, building rotary rig; Gulf Oil Corp. No. 4 Grizzell, SE SW NW section 31-17-10w, building rotary rig; Magnolia Petroleum Co. No. 2 Mueller, NE NW NE section 1-18-11w, moving in material; Texas Co. No. 1 Henning, NE NE NW section 22-19-11w, Lanterman area, building rig.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending April 10, and for the preceding week, was as follows:

	Barrels	
	Apr. 10	Apr. 3
Oxford City	2,725	2,675
Burrton	16,450	16,375
Ritz-Canton	5,400	5,400
Graber	2,750	2,800
Hollow-Nikkel	4,100	4,075
Voshell	2,975	3,000
Wellington	2,900	2,975
Ellsworth County:		
Lorraine-South Lorraine	4,425	5,350
Other pools	1,290	1,505
Rice-Barton counties:		
Bloomer	2,525	3,200
Chase	8,250	10,275
Geneseo	2,200	2,525
Raymond	2,275	2,150
Silica	15,325	17,800
Keesling	1,600	1,925
Hauschild	2,300	3,000
Miscellaneous Rice	5,510	6,655
Miscellaneous Barton	5,590	5,655
Russell County:		
Fairport	2,515	2,540
Gorham-East Gorham	2,940	3,605
Russell	2,655	1,930
Sullivan	3,570	5,705
Trapp	5,175	6,560
Miscellaneous Russell	8,395	8,025
Sedgwick County:		
Valley Center	1,320	1,300
Greenwich	1,295	1,280
Miscellaneous	2,170	2,125
Ellis County:		
Bemis	5,250	1,250
Miscellaneous Ellis	1,800	1,895
Kingman County	870	875
Stafford County	2,415	2,565
Greenwood County	9,500	9,750
Butler County	17,600	17,650
Other fields	22,715	24,780
Total Kansas	178,775	189,173

Stafford County

Stanolind Oil & Gas Co. No. 5 Komarek, SE cor. section 30-22-11w, Richardson area, Stafford County, made potential of 990 bbls. of oil after second acid treatment. Top of Siliceous lime was 3,543 feet; total depth, 3,580 feet.

J. E. Trigg and Vernon Oil & Gas Co. No. 1 Andrea, SE cor. section 4-23-12w, wildcat, topped anhydrite at 615 feet; Kansas City lime, 3,310 feet; Conglomerate, 3,590 feet; Viola lime, 3,617 feet; Simpson Dolomite, 3,635 feet; Siliceous lime, 3,693 feet; total depth, 3,735 feet, and was dry and abandoned. A slight showing of oil was found at 3,470-75 feet.

Two new operations in Stafford County were reported. Stanolind Oil & Gas Co. No. 1 Nolte, SE SE SW section 30-22-11w, Richardson area, was moving in material; same company's No. 8 Heyen B, SE SE NE section 31-22-11w, was a rig.

Reno County

Gulf Oil Corp. No. 1 Fluke, SE SE SW section 10-26-9w, Lerado field, was the largest of four new producers completed in Reno County. It topped Viola lime at 4,141 feet, was bottomed at 4,143 feet, and swabbed 308 bbls. of oil in 24 hours. Later, it pumped and flowed 364 bbls. in six hours and made potential of 3,275 bbls.

In the Burrton field, Barnsdall Oil Co. No. 2 Westfall B, SE NE SE section 19-24-4w, topped Chat at 3,336 feet; total depth, 3,385 feet; acidized; produced 950 bbls. of oil and 50 bbls. of water in 13 hours and made potential of 1,575 bbls., cutting 8 per cent water. Shaffer and others No. 4 Tucker, NW NW SW section 20-24-4w, made potential of 450 bbls. of oil from Chat at 3,324 feet; total depth, 3,391 feet.

Magnolia Petroleum Co. No. 4 Harris, NE SW NW section 9-26-4w, Hilger pool, had Viola lime at 4,055-58 feet, total depth, acidized and made potential of 1,192 bbls. of oil.

Foraker and others No. 1 Hiett, SE SW NE section 34-24-4w, wildcat, topped Kansas City lime at 2,658 feet; Chat, 3,424 feet; base of Mississippi at 3,760 feet; topped Viola lime at 3,907 feet; Wilcox sand, 3,925 feet; Siliceous lime, 4,010-31 feet, total depth, water intruded and it was dry and abandoned.

Helmerich & Payne and others No. 1 Benson, NE cor. section 5-25-6w, an old wildcat was deepened from

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4,195 feet to 4,223 feet and was dry and abandoned.

New work in Reno County: Duwe & Dustin No. 2 Evans, NW NE NW section 25-24-8w, Abbyville area, spudded; Carter Oil Co. No. 3 Hogan, NE NE SW section 19-24-4w, Burrton field, building rotary rig; same company's No. 4 Hogan, C S half S half SW section 19-24-4w, building rotary rig; National Petroleum Corp. No. 3 Tucker, SW SE NE section 19-24-4w, rig; Shell Petroleum Corp. No. 3 Lee, SW SW NE section 10-26-9w, Lerado area, was building rotary rig.

Empire Oil & Refining Co. No. 3 Mauck, NW SE NW section 15-26-9w, Lerado area, topped Viola lime at 4,148 feet; total depth, 4,156 feet; acidized with 4,000 gallons and flowed 881 bbls. of oil in six hours. Ohio Oil Co. No. 5 Priddle, C N half S half SE section 17-24-4w, Burrton district, topped Chat at 3,324 feet; had pay at 3,359 feet; total depth, 3,377 feet, and oil rose 2,000 feet in the hole in three hours.

Ellis County

Sunray Oil Co. No. 1 Befort, NE cor. section 11-14-20w, Ellis County wildcat, was dry and abandoned at 3,914 feet, total depth. Top of Anhydrite was 1,530 feet; Topeka lime, 3,245 feet; Kansas City lime, 3,545 feet; Conglomerate, 3,835 feet; LaMotte sand, 3,887 feet; Siliceous lime, 3,900 feet.

New operations in Ellis County were as follows: Margay Oil Co. No. 2 Bemis C, SW NE SW section 22-11-17w, Bemis field, cellar; Carter Oil Co. No. 2 Staab, C E half E half NW section 11-12-18w, Walters pool, ponds; J. C. Shaffer, Inc., No. 1 Staab, SE cor. section 25-12-18w, wildcat, location; J. J. Muth No. 1 Penney, NW NE SE section 29-14-18w, wildcat, rigging up.

Carter Oil Co. No. 1 Staab, NE NE NW section 11-12-18w, which extended the Walter pool, Ellis County, nearly one-half mile south, made potential of 900 bbls. of oil, down four to six hours, but had not been completed. It topped Siliceous lime at 3,615 feet; total depth, 3,621 feet.

Ellsworth County

Carter Oil Co. and others No. 3 Elizabeth, C N half N half NE section 34-17-9w, Lorraine area, topped Siliceous lime at 3,180 feet; had a hole full of water at 3,194-3,200 feet, total depth, and was dry and abandoned.

Gulf Oil Corp. No. 2 Grizzell, NW SW NW section 31-17-10w, Ellsworth County side of the Bloomer field, was bottomed at 3,258 feet, and swabbed 56 bbls. of oil in six hours. It was acidized and made potential of 2,080 bbls., producing from Siliceous lime topped at 3,248 feet.

Rush County

Northern Natural Gas Co. No. 1 Mauler, C SE section 12-18-16w, Otis field, Rush County, topped anhydrite at 988 feet; Conglomerate, 3,477 feet; total depth, 3,535 feet, and produced 51,000,000 feet of gas.

McPherson County

W. C. McBride, Inc., No. 7 Whitright, SW NW SW section 30-19-1w, Ritz-Canton area, McPherson County, topped Chat at 2,919 feet; total depth, 2,979 feet; swabbed 20 bbls. of oil and 20 bbls. of water in 17 hours; acidized and made potential of 57 bbls. of oil, with 137 bbls. of water.

Saline County

Ryan Consolidated Co. No. 1 Wuerth, SW SW NW section 28-14-2w, wildcat in Saline County, topped Viola lime at 3,265 feet; had a slight showing of oil at 3,300 feet; found Siliceous lime at 3,405 feet; had a hole full of water at 3,410-15 feet, total depth, and was dry and abandoned.

Harvey County

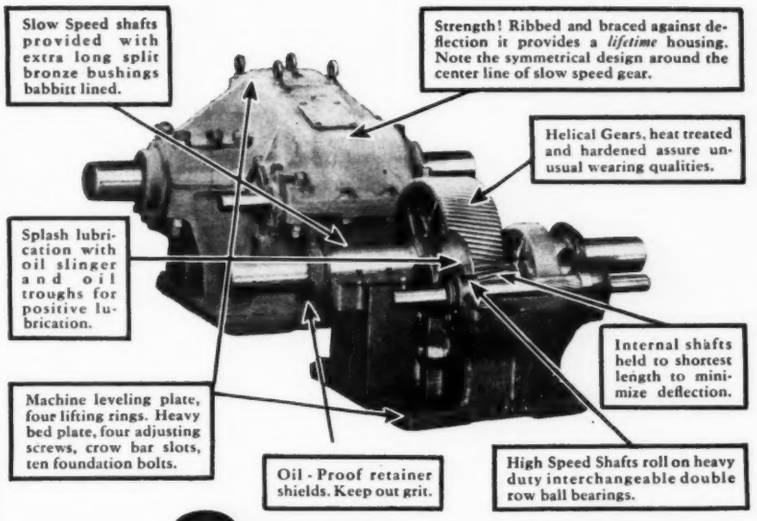
Olson Drilling Co. and Shell Petroleum Corp. No. 3 Nelson, SW SW NW section 30-23-3w, Burrton field, topped Chat at 3,280 feet; total depth, 3,377 feet; acidized and made potential of 211 bbls. of oil.

Sedgwick County

Gulf Oil Corp. No. 2 Hamnt, NW NE NW section 14-26-2e, Greenwich area, Sedgwick County, had Siliceous lime at 3,301 feet and was completed as a water disposal well at 4,008 feet, total depth.

Clark County

Olson Drilling Co. No. 2 Morrison, C NW NE section 20-32-21w, was the second oil producer to be completed in the Morrison area, Clark County. It was an old well deepened from old plugged back depth of 6,482 feet. It started showing oil at 6,506 feet, and at 6,516 feet it started filling up with water, oil and basic sedi-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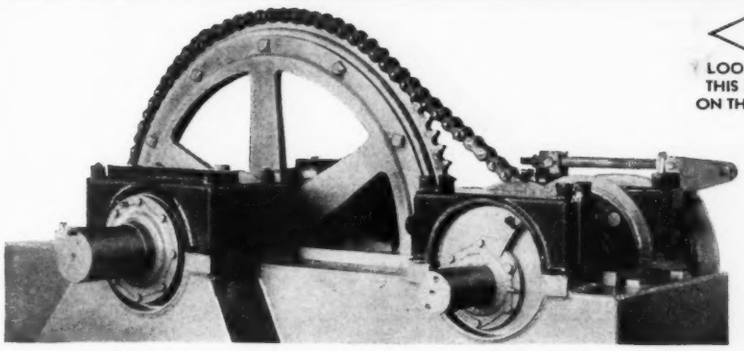

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ment. Whipstock was set at 5,395 feet. On deepening, Viola lime was topped at 6,498 feet; Dolomite, 6,536 feet; total depth, 6,538 feet. It produced 186 bbls. of oil in 24 hours, cutting 65 to 75 per cent water. Operators continued to swab and pump and water declined, and on completion test it made potential of 85 bbls. of oil, with 170 bbls. of water daily.

Woodson County

Reamer No. 1 Corn, NE cor. section 31-26-15, Woodson County wildcat, had lime at 1,469 feet, and was dry and abandoned at 1,825 feet, total depth.

Butler County

National Refining Co. No. 4 Sutter A, NE SE NW section 1-28-6, McCullough pool, Butler County, had Wilcox sand at 3,172-84 feet, total depth. It pumped 20 bbls. of oil and 30 bbls. of water in 24 hours; later, it pumped 30 bbls. of oil and 12 bbls. of water in 24 hours, and still later made potential of 186 bbls. of oil, cutting 1 per cent water.

Cox & McGinnis No. 2 Huston, SE SW NE section 1-25-3, Potwin area, was fishing at 580 feet. National Refining Co. No. 1 Sutter B, SE SE NE section 13-28-6, north of A. M. Landon No. 1 McCaig, wildcat discovery well, was a location.

Greenwood County

Lauck & Moncrief No. 1 Gruber, NW. cor. section 5-23-13, Greenwood County wildcat, topped sand at 1,622 feet; had a hole full of water at 1,650 feet; topped Mississippi lime at 1,758 feet; had a hole full of water at 1,802 feet and was dry and abandoned at 1,838 feet, total depth.

Cowley County

W. M. McKnabb No. 1 Community, C NE NW section 14-34-3, Cowley County wildcat, an old well deepened from 2,672 feet, topped Wilcox sand at 3,826 feet; Siliceous lime, 3,862-80 feet; total depth, water intruded and it was dry and abandoned. Same operator's No. 1 Weldschmidt, SW SW NW section 18-34-6, wildcat, had sand at 1,578 feet; first gas at 1,580 feet; gas volume was estimated at 8,000,000 feet at 1,606 feet; had sands at 2,949 feet and 2,960 feet; topped Chat at 3,032 feet; had Wilcox sand at 3,510-20 feet, total depth, with a hole full of water, and was dry and abandoned.

L. H. Wentz and Amerada Petroleum Corp. No. 1 Rush, NW SW SW section 36-34-6, wildcat, had broken Bartlesville sand at 2,935 feet; Chat, 3,015 feet; lime, 3,033 feet; water at 3,040-43 feet, and it was dry and abandoned at 3,046 feet, total depth.

Two new operations in Cowley County were reported. Texas Co. No. 1 Beeman, NE NW SW section 33-31-3e, Weathered area, was moving in material; Fred Moore No. 1-A Radcliff, SW SE NE section 5-33-7, Countryman pool, was a cellar.

Sumner County

Texas Co. No. 6 Murphy, SW SW SE section 32-31-1w, Wellington area, Sumner County, topped Chat at 3,652 feet; had pay at 3,684-90 feet, total depth; was acidized and flowed 217 bbls. of oil in 13 hours, making potential of 460 bbls. Transwestern Oil Co. No. 7 Murphy, SE SW SE section 32-31-1w, had Chat at 3,656 feet, was bottomed at 3,708 feet, and pumped 355 bbls. of oil in 24 hours after acid treatment.

Amerada Petroleum Corp. No. 1 Nelson, NE NE NW section 5-32-1w, was a cellar.

Various First Reports

In Rooks County, S. C. Hoel and others No. 1 Ives, SW SW NE section 11-7-18w, wildcat, was rigging up. Brunson Drilling Co. and others No. 1 Casey, SE SE NE section 22-9-16w, wildcat, was building rig.

In western Osborne County, J. E. Waldron No. 1 Neuschwanger, SE NE NW section 11-8-14w, wildcat, spudded and was shut down.

In Trego County, Rose Spring Drilling Co. and others No. 1 Duncan, SE cor. section 35-12-21w, was a rig.

In Pawnee County, Capshaw and others No. 1 Reiderer, C W half NW SE section 29-21-19w, wildcat, set casing at 155 feet and was waiting on cement.

Drilling in Washington

SEATTLE, Wash., Apr. 12. — Notwithstanding the failure to find commercial oil production in the numerous tests that have been drilled in Washington, the search for oil continues in counties on the Pacific Coast, including Grays Harbor, Jefferson and Clallam.

Ed Sims, of Port Angeles, Wash., who organized companies that drilled several holes in the Olympic peninsula, heads a group of Seattle men who are financing a well near Aberdeen, Grays Harbor County, on the Wishkah structure. The drillers cemented a string of 6-inch pipe at 1,200 feet and prepared to drill into a cap rock formation which surface geology indicates a possible producer. The work is being done with a rotary outfit.

The Okla-Tex Co., another group of Northwest investors, is drilling a test in the extreme western Olympic peninsula country, not a great distance from Hoh Head, Jefferson County, where several wells, all showing small quantities of high-grade paraffin base oil, were brought in, but which did not produce commercially. This hole, being drilled with a small rotary, is in a formation which, according to surface geology, carries a possible pay horizon at about 1,000 feet. The geologists who have looked over the country think there is a tight fold that is not, as near as they can tell, faulted. Most of the peninsula formations drilled to date—including that at Hoh Head—are badly faulted. The well is located near Kalalock, Jefferson County, in the Puget Sound area.

Another well, several miles south of Forks, Clallam County, is being drilled by Malcolm Scott and Charles Erdman, and financed by a Puget Sound syndicate. The men are using a small rotary and plan to drill several holes in an effort to learn more about the formation concerning which information is sketchy.

Cities Service Co., Sun Oil Co. and other companies have had men in the district from time to time, who have leased a little but shown no inclination to drill. Sun has two large blocks, one in the Wynooche Valley near Montesano, Grays Harbor County, and the other in the western rim of the peninsula. Rumors of imminent drilling by Sun have been heard but all have been denied by Sam H. Williston, Sun's field man in the Northwest.

NATIONAL BANK OF TULSA

Tulsa, Oklahoma

Statement of Condition March 31, 1937

RESOURCES

Cash and Due from Banks	$18,965,747.95	
U. S. Government Securities	18,025,168.60*	
Other Bonds and Warrants	7,161,623.08*	44,152,539.63
Loans and Discounts		14,906,289.29
Overdrafts		5,298.21
Income Receivable Accrued		185,129.22
Stock in Federal Reserve Bank		180,000.00
Investment in Bank Premises		2,310,514.85
Customers' Liability under Acceptances		9,158.70
TOTAL		$61,748,929.90

LIABILITIES

Deposits		$55,359,444.00
Acceptances Executed		9,158.70
Income Collected not Earned		78,355.28
Interest, Taxes, etc., Accrued		73,679.55
Reserve for Preferred Dividend		13,125.00
Capital—Preferred	$1,750,000.00	
Capital—Common	2,250,000.00	
Surplus	2,000,000.00	
Undivided Profits and Reserves	215,167.37	6,215,167.37
TOTAL		$61,748,929.90

* Of the total of $25,186,791.68 U. S. Government Securities and Other Bonds and Warrants $14,984,711.15 mature within five years.

COMPARATIVE DEPOSITS

March 31, 1934	$34,014,106.94
March 31, 1935	39,269,375.86
March 31, 1936	49,688,027.17
March 31, 1937	55,359,444.00

The Oil Bank of America

Member Federal Deposit Insurance Corporation

Oklahoma Operations

By
DAL DALRYMPLE

WILDCAT IN CROMWELL AREA FAVORED TO OPEN NEW POOL

An Oklahoma wildcat was giving promise at the week-end of opening a new producing area southwest of the old Cromwell pool of Seminole County. It was Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW section 28-10-8. Oil hade risen 2,000 feet in the hole when bottomed at 4,172 feet in Simpson Dolomite. The wildcat began to show free oil at 4,169 feet. Seven-inch casing was set at 4,128 feet. The crew was drilling ahead slowly, momentarily expecting the Wilcox sand. Many operators long have believed a Wilcox sand structure would be found on the old Cromwell high.

Stephens County wildcats continued to monopolize much of the Oklahoma oil news the past week. Two new wildcats were reported. Charles Newsom and Phillip Boyle started work on a deep test at No. 1 Phile, SW cor. section 1-2s-7w, southwest of Duncan. W. M. Angle and associates made location for No. 1 Long, SW SW NE section 24-1n-7w, northeast of Duncan, and was due to start work this week. Helmerich & Payne and others No. 1 Graham, SW SW NE section 12-1n-5w, the wildcat which blew in as a wild gasser after having been abandoned, was reported cratering about 100 feet from the derrick, with gas breaking through in a creek bed. Steps were being taken to complete the well. Carter Oil Co. and others No. 1 Harley, C NE NE section 24-2s-4w, closely watched wildcat southeast of the shallow Milroy pool, had a showing of oil and mud on drill-stem test after drilling and coring to 4,399 feet in Hunton lime, topped at 4,374 feet. Operators were reaming the hole, however, and will drill deeper. The Hunton was found considerably higher than in the deep sand discovery well in the Fox field, to the east in Carter County.

Work orders have been issued for Neff, Godfrey & Andrea No. 1 Melton, SE NW SE section 16-3n-22w, wildcat in Greer County, 8 miles south of Mangum and near the Jackson County line. Location is on a 6,400-acre block, spread through 13 sections. Several major and independent operators have bought acreage in the block, and others own adjoining tracts.

The Tulsa Airport pool continues to expand, and is having a wholesome effect in reviving operations in other shallow districts in northeastern Oklahoma. Some 22 producers have been completed in the Airport pool, and the twenty-third was near completion. Most of the Tulsa wells are in Township 20-13e, and extending into Township 19-13e. More than 20 wells were being drilled in the Airport area, and some other new tests were being drilled elsewhere around Tulsa.

Pontotoc County

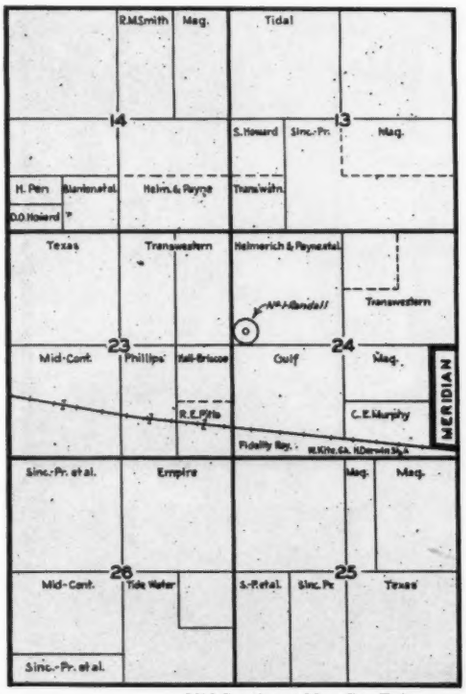
Eleven wells were completed in the busy Fitts field, Pontotoc County, and two old wells were recompleted. A large producer also was completed in the Jesse area, and there were several completions elsewhere in the county.

Mid-Continent Petroleum Corp. No. 3 Statler, SE NE SW section 2-1n-7, was the new Jesse well. It flowed 1,695 bbls. of oil in two hours and 40 minutes while drilling and cleaning out and made potential of 4,530 bbls. Top of Viola lime was 4,100 feet; Bromide, 4,350 feet; sand, 4,500 feet; total depth, 4,510 feet.

In the Fitts field, E. H. Moore No. 12 Akers, NW NW NE section 36-2n-6, topped Hunton lime at 3,481 feet; Sylvan shale, 3,760 feet; total depth, 3,765 feet. It flowed 5 bbls. of oil in one hour on gas lift; was acidized and reacidized; flowed 324 bbls. gross in two hours and made potential of 2,856 bbls. Same operator's No. 2-A Mack, SE NW SE section 28-2-7, had Hunton lime at 3,190 feet; Sylvan shale, 3,447 feet; total depth, 3,460 feet. It was acidized, flowed 85 bbls. of oil gross in three hours; reacidized, and made potential of 781 bbls.

Magnolia Petroleum Co. No. 10 Norris, SE NW SE section 21-2-7, flowed 360 bbls. of oil in one hour, gross, after acidizing, and made potential of 1,050 bbls. Top of Viola lime was 4,045 feet; total depth, 4,310 feet. Same company's No. 30 Metropolitan Life, SW NE SW section 27-2-7, found Bromide at 3,895 feet; McLish, 4,090 feet, and was bottomed at 4,280 feet. It was acidized, flowed 475 bbls. of oil gross in 37 minutes, and made potential of 2,850 bbls.

Sinclair Prairie Oil Co. No. 3 Moody, SE SE NE section 22-2-7, had Hunton lime at 3,712 feet; total depth,



—Mid-Continent Map Co., Tulsa.

Rotary was being rigged up at Helmerich & Payne No. 1 Randall, section 24-16-1w, wildcat, in eastern Logan County

3,846 feet; flowed 324 bbls. of oil in three hours; was acidized and made potential of 3,245 bbls. Same company's No. 20 Woolley B, NW NE SW section 22-2-7, flowed 494 bbls. of oil gross in two hours and made potential of 2,483 bbls., from Hunton lime topped at 3,648 feet; total depth, 3,785 feet.

Skelly Oil Co. and Phillips Petroleum Co. No. 1 Metropolitan Life B, SE NE SW section 23-2-7, topped Hunton lime at 3,640 feet; Sylvan shale, 4,038 feet; total depth, 4,040 feet; flowed 701 bbls. of oil in two hours; acidized and made potential of 5,353 bbls.

Phillips Petroleum Co. No. 4 Bates, NE NE NW section 26-2-7, had Viola lime at 3,938 feet; Bromide, 4,210 feet; total depth, 4,300 feet; acidized; flowed 475 bbls. of oil gross in one hour; reacidized two times and made potential of 2,130 bbls.

Simpson & Feil No. 6 Westheimer, NE SW NW section 26-2-7, had Viola lime at 3,795 feet; Bromide, 4,065 feet; McLish, 4,260 feet; total depth, 4,288 feet; acidized; flowed 179 bbls. of oil net in one hour and made potential of 2,891 bbls. Fleetborn & Simpson No. 8-A Woolley, SW NW SW section 27-2-7, flowed 305 bbls. Top of Hunton lime was 3,239 feet; Sylvan shale, 3,526 feet; total depth, 3,527 feet. J. E. Crosbie No. 4-A Harden, SE SW NE section 30-2-7, had Hunton lime at 3,282 feet; Sylvan shale, 3,576 feet; total depth, 3,577 feet; acidized, flowed 247 bbls. of oil in three hours; potential 1,381 bbls.

Old Wells Reworked

Burke-Greis Oil Co. No. 4 Chambers, SE NE NW section 36-2-6, an old well, was plugged back from 4,433 feet to 3,836 feet; shot and acidized; flowed 310 bbls. of oil in two hours, making potential of 3,766 bbls., recompleted. E. H. Moore and others No. 3 Smith B. NW NE NE section 36-2-6, an old well, was plugged back from 4,357 feet to 4,290 feet, pumped 55 bbls. of oil in 12 hours, recompleted.

In the Allen area, Sinclair Prairie Oil Co. No. 3 Snow, NE SW SW section 28-5-8, had Allen sand at 793-803 feet; total depth, 808 feet; was shot and pumped 3 bbls. of oil daily.

Phillips Boyle No. 2 Crist, SE SE SW section 30-5-4, was temporarily abandoned at 1,390 feet, total depth. H. C. Marshall and others No. 1 Porter, NW SW NW section 31-5-4, was dry and abandoned at 1,941 feet, total depth. Mid-Texas Petroleum Co. No. 1 Porter, NW SE NW section 31-5-4, was dry and abandoned at 2,132 feet, total depth.

New work in Pontotoc County: Continental Oil Co. No. 1-A Helms, NW SW SE section 2-1n-7, old well being deepened, drilling at 4,580 feet; Mid-Continent Petroleum Corp. No. 4 Statler, SE NE SW section 2-1n-7, drilling at 95 feet; Blackstock & Deaner and others No. 1 Thompson, NE cor. section 4-1n-7, location; Narvarro Oil Co. No. 1 Horn, NE SE NE section 22-2-7, location; same operator's No. 2 Horn, NW SW NW section 23-2-7, location; E. H. Moore No. 15 Akers, NE SW NE section 36-2-6, location; same operator's No. 16 Akers, NW SW NE section 36-2-6, location; Moore's No. 4 Smith B, NE cor. section 36-2-6, old well cleaning out; same operator's No. 2 Ingram, SW NE NE section 22-2-7, cellar and pits; same operator's No. 2 Frazier, SE NW NW section 23-2-7, location; same operator's No. 1 Thompson, NW SE SE section 33-2-7, location; Amerada Petroleum Corp. No. 12 Woolley, SE SE NW section 22-2-7, building rig; same company's No. 13 Woolley, SW SE NW section 22-2-7, building rig; same company's No. 14 Woolley, NE SE NW section 22-2-7, location; same company's No. 7 Smith, NE SW NW section 28-2-7, building rig; Magnolia Petroleum Co. No. 11 Norris, SE NW SE section 21-2-7, spudded; same company's No. 1 Chambers, NW SW NW section 36-2-6, rig on ground; Fleetborn Oil Corp. No. 2 Lewis, SW SE SW section 19-2-7, cellar and pits; Fleetborn & Simpson No. 1 Newell, NW NW NE section 26-2-7, cellar and pits; Skelly Oil Co. and Phillips Petroleum Co. No. 1 Metropolitan Life, SE NW SE section 23-2-7, rig; Patsy Oil Co. No. 1 Magnuson, SW SE SE section 23-2-7, an old well plugged back and testing Hunton lime; Phillips Petroleum Co. No. 17 Norris, SE SE SW section 25-2-6, cellar and pits; W. A. Delaney No. 4 Smith, SW cor. section 25-2-6, cellar ond pits; Bishop Oil Co. No. 3-A Simpson, SW NW NW section 28-2-7, cellar and pits.

Okfuskee County

Eleven producing wells were completed in the Okfuskee County sector of the Olympic field. Chapman & McFarlin No. 12 Williams, NW NE NW section 30-10-9, flowed 289 bbls. of oil in 24 hours after shooting. It topped Senora sand at 1,742 feet and was bottomed at 1,790 feet. Same operator's No. 8 Yarbrough, NW NW NE section 18-10-9, had Senora sand at 1,845 feet; total depth, 1,873 feet; shot and swabbed 8 bbls. of oil in 24 hours, and pumped 8 bbls. in 24 hours.

Manahan Oil Co. No. 3 Bunner A, SE NE SE section 24-10-8, topped Senora sand at 1,857 feet; total depth, 1,875 feet; and pumped 160 bbls. of oil in 24 hours. Same operator's No. 4 Bunner A, NE NE SE section 24-10-8, pumped 80 bbls. of oil in 24 hours after a shot, from Senora sand at 1,866 feet; total depth, 1,877 feet.

Same operator's No. 17 Dalton, SE NE SW section 36-10-8, had Senora sand at 1,740 feet; total depth, 1,762 feet; pumped 20 bbls. of oil and 20 bbls. of water in 24 hours.

Blackwell Oil & Gas Co. and Phillips Petroleum Co. No. 4 Lehmar, SW SW NW section 17-10-9, shot and pumped 30 bbls. of oil in 24 hours from Senora sand at 1,864 feet; total depth, 1,945 feet. Same operator's No. 1 Lehmar B, NE SW NW section 18-10-9, had Senora sand at 1,857 feet; total depth, 1,897 feet; was shot and swabbed 131 bbls. of oil and 8 bbls. of water in 10 hours, and pumped 48 bbls. of oil and 2 bbls. of water in 24 hours.

Ark Royalty Co. No. 2 Brooks, SE NE SW section 18-10-9, had Senora sand at 1,866 feet; total depth, 1,904 feet; plugged back to 1,901 feet; was shot, swabbed 40 bbls. of oil in 24 hours, and pumped 71 bbls. of oil and 20 bbls. of water in 24 hours. Same company's No. 8 Fisher, NE NE SE section 18-10-9, was shot and pumped 75 bbls. of oil and 1 bbl. of water in 24 hours from Senora sand at 1,874 feet; total depth, 1,930 feet.

Sinclair Prairie Oil Co. No. 6 Fisher, SW NW SW section 19-10-9, found Senora sand at 1,842 feet; total depth, 1,869 feet; was shot and swabbed 90 bbls. of oil in 24 hours. Same company's No. 7 Fisher, SW SE SW section 19-10-9, had Senora sand at 1,758 feet; total depth, 1,804 feet; was shot and swabbed 80 bbls. of oil in 18 hours.

First reports of new work in Okfuskee County: Sinclair Prairie Oil Co. No. 1 Phillips, NE SE NE section 24-10-8, rig; same company's No. 8 Fisher, NW NW SW section 19-10-9, drilling at 1,100 feet; Ark Royalty Co. No. 1 Lehmar, NW NW SW section 17-10-9, cellar and pits; same operator's No. 11 Fisher, NE SW SE section 18-10-9, rigging up rotary; same company's No. 12 Fisher, NW SE SE section 18-10-9, set 10-inch casing at 40 feet; same company's No. 5 Brooks, NE SE SW section 18-10-9, set 10-inch casing at 40 feet; Grimes & O'Neil No. 9 Wind, C SE NE section 35-11-9, location; Odell Henson No. 1-A Yahola, NE NW SE section 9-12-11, drilling at 400 feet.

. . . from Well to Storage, to Ship

Over 43,000,000 (million) barrels of Texas crudes and refined oils were shipped through the three divisions of the Port of Corpus Christi last year. Ninety fields, with nearly 6,000 producing wells, having a daily "run" of over 190,000 barrels are pouring oil into terminals here, for movement through this modern facility.

Truly, here IS the oil capital of the South Texas empire, acknowledged as the nation's greatest oil reserve.

Three modern oil docks, on thirty feet of water; ample storage facilities, all with direct pipe line connections.

A limited amount of desirable acreage at the Port site is available for lease.

Address:

Nueces County Navigation Commission
Corpus Christi, Texas

The PORT *of* CORPUS CHRISTI *Texas*

Seminole County

J. E. Crosbie and others No. 1 McGirt, SW SE SE section 25-10-7, North Bethel pool, Seminole County, had Cromwell sand at 3,647 feet; total depth, 3,664 feet; flowed 519 bbls. of oil in 24 hours, cutting 36 per cent water; later pumped 87 bbls. of oil and 35 bbls. of water in 24 hours.

Ross Oil Co. No. 1-A Johnson, NE NE SW section 24-10-7, wildcat, had Calvin sand at 2,110 feet; Senora, 2,375 feet; Earlsboro, 2,810 feet; Lime, 3,185 feet; Booch sand, 3,345 feet; Gilcrease, 3,475 feet; Cromwell, 3,552 feet; total depth, 3,567 feet, and was dry and abandoned.

Sinclair Prairie Oil Co. No. 3 Amos B, NW NW SW section 7-5-8, Allen area, topped Hunton lime at 3,918 feet; first Wilcox sand, 4,206 feet; second Wilcox, 4,282 feet; total depth, 4,285 feet; plugged back to 4,075 feet; perforated casing in Hunton, acidized and swabbed 126 bbls. of oil gross in 24 hours; reacidized, and swabbed 115 bbls. gross in 24 hours, later swabbing 15 bbls. daily.

E. W. Jones No. 1 Coker, NW NW SW section 1-8-5, Carr City area, had Hunton lime at 4,010 feet; Sylvan shale, 4,047 feet; Viola lime, 4,160 feet; total depth, 4,164 feet; acidized; swabbed 400 bbls. of oil net in 24 hours from Hunton lime; reacidized; swabbed 372 bbls. of oil net in 19 hours, and was completed as a pumper. Pure Oil Co. No. 1-A Townsend, SW SW NE section 12-8-5, topped Hunton at 3,989 feet; Sylvan shale, 4,020 feet; first Wilcox sand, 4,220 feet; second sand, 4,371 feet; total depth, 4,382 feet; water intruded; plugged back to 4,037 feet; shot; swabbed 65 bbls. in nine hours; acidized and swabbed 135 bbls. of oil in eight hours, and pumped 115 bbls. in 16 hours.

Amerada Petroleum Corp. and others No. 1 Smith, NE SW SW section 3-10-5, North Earlsboro area, had Wilcox sand at 4,650 feet and was bottomed at 4,668 feet. It swabbed 205 bbls. of oil and 263 bbls. of water in 20½ hours, and later swabbed 110 bbls. of oil and 265 bbls. of water in 24 hours.

New work in Seminole County: J. Lynch and others No. 2 Crorens, NE SW SW section 24-5-5, building rig; Magnolia Petroleum Co. No. 1 fee, NW NW SE section 24-5-5, building rig; J. E. Hall and others No. 1 Casey, SE SE NE section 30-6-8, cellar and pits; Carter Oil Co. No. 1 Kiker, C W half NE NW section 11-9-6, an old well, deepened from 4,030 feet to 4,053 feet, acidized, pumped 51 bbls. of oil and 3 bbls. of water, recompleted; Texas Co. No. 8 Mayhue, SE NE NW section 14-9-6, old well being deepened, drilling at 4,009 feet; same company's No. 4 Grisso, SE NW NW section 16-9-7, cellar and pits; J. D. Campbell No. 2 Campbell, NE SW NE section 17-9-7, old well being deepened, drilling at 3,412 feet; Helmerich & Payne No. 1 Island, NE NE SW section 21-9-7, cellar and pits.

Oklahoma County

Four wells were completed in the Oklahoma City field, Oklahoma County, with one completion in the Edmond field. Phillips Petroleum Co. No. 6 Stiles, SE NW NE section 34-12-3w, had Wilcox sand at 6,352-6,493 feet; total depth, 6,503 feet; and made potential of 5,020 bbls. of oil on gas lift and Reda pump.

British American Oil Producing Co. No. 3 Parkway, SW SW NE section 27-12-3w, had second Wilcox sand at 6,390 feet; total depth, 6,505 feet; flowed 610 bbls. of oil in 17 hours on gas lift and through drill pipe, and made potential of 6,951 bbls.

Inland Development Co. No. 1 State, NW NE SE section 27-12-3w, made potential of 661 bbls. of oil on gas lift, from second Wilcox sand at 6,350 feet; total depth, 6,505 feet. Champlin & Murray No. 1 Crawford, NE NE SW section 15-12-3w, had pay at 6,360 feet; total depth, 6,475 feet; and flowed 440 bbls. of oil in 24 hours.

Transwestern Oil Co. No. 6 Suneram, NE SW NE section 6-13-3w, Edmond field, had Dolomite at 6,556 feet; was bottomed at 6,615 feet; acidized and flowed 1,500 bbls. of oil in 19 hours; reacidized, and made potential of 9,330 bbls.

The only new work reported in Oklahoma County was at Larkins & Warr No. 2 Lucas, NE NW SW section 36-12-3w, rigging up rotary.

Logan County

Amerada Petroleum Corp. No. 3 Denny, NW SE SE section 33-17-4w, Crescent field, had first Wilcox sand at 6,134 feet; second sand at 6,315 feet; total depth, 6,399 feet; plugged back to 6,194 feet; perforated casing and acidized, and pumped 244 bbls. of oil in 24 hours, cutting 4 per cent water.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Goddard, NE NE SW section 20-18-4w, topped first Wilcox sand at 5,965 feet; second sand,

6,106 feet; total depth, 6,262 feet; water intruded and it was abandoned.

One new test in Logan County was reported. It was Mid-Continent Petroleum Corp. No. 1 East Dobson, SE cor. section 11-17-1w, a cellar.

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending April 10, and for the preceding week, was as follows:

	Barrels	
	Apr. 10	Apr. 3
Allen	6,325	6,450
Burbank	7,650	7,650
South Burbank	16,250	16,100
Balance Osage	21,500	21,500
Blackwell district	5,125	5,150
Bristow-Slick	7,750	7,925
Chandler	3,475	3,450
Crescent	12,575	14,550
Cromwell	3,250	3,300
Cushing-Shamrock	10,225	10,200
Duncan district	3,825	3,800
Edmond	24,375	23,750
Fish	6,325	6,225
Fitts	84,025	88,375
Graham	4,725	4,750
Gray	1,350	1,400
Healdton	9,675	9,675
Hewitt	4,300	4,325
Holdenville	950	950
Keokuk	7,275	7,800
Lucien	13,500	13,225
Moore	12,050	13,700
Oklahoma City	165,425	164,400
Olympic	15,725	14,875
Papoose	900	875
Polo	1,700	1,675
Sasakwa and townsite	3,250	3,200
Sholem-Alechem	3,225	3,275
Seminole:		
Bowlegs	11,525	11,775
Carr City	6,000	6,025
Earlsboro	6,775	6,850
South Earlsboro	675	750
East Earlsboro	7,700	7,675
Little River	11,175	10,975
East Little River	1,250	1,150
Maud	750	875
Mission	2,250	2,250
Seminole	9,675	9,650
East Seminole	3,375	3,425
Searight	4,625	4,975
Total Seminole	65,775	66,375
St. Louis-Pearson	23,350	22,625
Tatums	4,800	4,950
Tonkawa-Garber-Thomas	10,250	10,500
Wewoka	3,475	3,425
Yale-Jennings	4,150	4,125
Other pools	73,100	74,175
Total Oklahoma	641,625	648,725

Osage County

Lewis Production Co. and others No. 6 Osage, SW SE SE section 28-24-7, Naval Reserve field, Osage County, had first showing of oil at 2,611 feet; first free oil at 2,618 feet; was bottomed at 2,654 feet; and after a shot, flowed 314 bbls. of oil in 24 hours.

Link Oil Co. No. 9 Osage, SE NW NW section 4-22-12, topped Burgess sand at 1,656 feet; total depth, 1,699 feet; was shot and pumped 5 bbls. of oil daily. Barnsdall Oil Co. No. 15 Osage, NE NW SW section 17-23-12, Avant area, had Bartlesville sand at 1,407 feet; total depth, 1,540 feet; was shot and pumped 35 bbls. of oil a day. Arthur Oil Co. No. 26 Osage, NE SE SW section 5-25-12, had Bartlesville sand at 1,660 feet; total depth, 1,726 feet; was shot and pumped 5 bbls. of oil and 8 bbls. of water a day.

Eva H. Greene No. 1 Osage, NE SE NE section 11-21-11, an old well, was deepened from 1,869 feet to 1,909 feet, pumped 5 bbls. of oil daily, recompleted.

Royal Oil & Gas Co. No. 50 Osage, SW NE SW section 5-23-12, was bottomed at 1,588 feet; plugged back to 1,549 feet and was completed as an input well. Wolverine Oil Co. and others No. 18 North Avant Unit, NE NW SE section 31-24-12, was completed as a repressure well at 1,770 feet, total depth.

New work in Osage County: Barnsdall Oil Co. No. 21 Osage, SE NW SE section 5-20-12, drilling at 636 feet; Devonian Oil Co. No. 3 Osage, SE NE NE section 33-12-10, an old well, preparing to deepen; Ray Branstetter No. 5 Osage, NE SW SW section 28-22-11, location; Peters Petroleum Co. and Norbla Oil Corp. No. 1 Osage, SW SE NW section 28-24-8, location; Lewis Production Co. No. 2 Osage, SW NW NW section 34-24-7, location; Midco Oil Corp. No. 2 Osage, NW SW SW section 35-27-7, location.

Pottawatomie County

Carter Oil Co. No. 3 Monett, SW NE SW section 35-7-4, St. Louis area, Pottawatomie County, swabbed 220 bbls. of oil, with 2 per cent water, in nine hours after acid treatment. It was reacidized and pumped 1,382 bbls. of oil and 480 bbls. of water in 24 hours. Top of Viola lime was 4,169 feet; Dense, 4,225 feet; Dolomite, 4,262 feet; total depth, 4,315 feet.

Phillips Petroleum Co. No. 1-A Atwater, NE SE SE section 9-7-4, had Earlsboro sand at 3,465 feet; total depth, 3,485 feet; shot and swabbed and flowed 130 bbls. of oil in 24 hours. Peru Oil & Gas Co. No. 1-B Vinson, NW SE NE section 13-7-4, topped Wilcox sand at 4,104 feet; total depth, 4,115 feet; and pumped 24 bbls. of oil and 400 bbls. of water in 24 hours.

Gulf Oil Corp. No. 1 O'Connor, NW NW SE section 25-6-4, Gray pool, an old well, was deepened from 3,496 feet to 3,650 feet, had a hole full of water; plugged back to 3,560 feet and was dry and abandoned.

Two new operations in the Shawnee pool were reported. Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 2 Rushing, SW SE SW section 32-11-4, was building rig. Indian States Oil Co. No. 2 Gunter, NW NW SW section 32-11-4, had dug cellar and pits.

Hughes County

Winona-Jarvis-Holmes No. 1 Harjo, SW SE NW section 20-7-8, Fish area, Hughes County, had Booch sand at 2,885-2,928 feet; total depth, 2,932 feet; swabbed 43 bbls. of oil in 12 hours; was shot; swabbed 68 bbls. in nine hours; cleaned out and swabbed 92 bbls. in 24 hours, completed.

Magnolia Petroleum Co. No. 1 Frederick, NW NE SW section 5-7-8, an old well, was plugged back from 4,198 feet to 4,033 feet; was acidized and flowed 86 bbls. of oil net in 24 hours, recompleted.

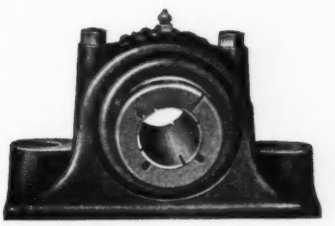
New work in Hughes County: Marbett Oil Co. No. 1 Culver, NE cor. section 11-7-8, building rig; Sinclair Prairie Oil Co. No. 1-A Harjo, NE SW SE section 11-7-8, cellar and pits; C. A. Palmer and others No. 1 Scroggins, NW NW SE section 20-7-8, cellar and pits.

Creek County

Nabob Oil Co. No. 1-A Smith, SE SE NW section 30-14-8, Creek County, topped Wilcox sand at 4,004 feet; total depth, 4,025 feet; and pumped 135 bbls. of oil in 25 hours.

Berry and others No. 2-A Ingalls, C S half SE SE section 24-17-7, Cushing field, had Bruner sand at 954 feet; total depth, 964 feet, and produced 2,976,000 feet of gas. M. M. Mershon and others No. 1-A Hawkins, SW

INCREASE
PRODUCTION
EFFICIENCY



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MEDART

cor. section 31-18-10, had Red Fork sand at 2,282 feet; Bartlesville sand, 2,393 feet; water intruded at 2,500 feet, total depth. It was plugged back to 2,400 feet and pumped 5 bbls. of oil daily from Red Fork sand. Curtis Oil Co. No. 2-A Larrimor, NW SE NW section 10-19-9, had a hole full of water in Bartlesville sand at 2,370-2,402 feet, total depth, and was dry and abandoned.

New work in Creek County: Wood Oil Co. No. 1-A Washington, SW NE section 7-17-7, running 12-inch casing at 500 feet; Sinclair Prairie Oil Co. and Mid-Continent Petroleum Corp. No. 2 Pressure, SW SW NW NW section 15-17-7, spudded; Berry and others No. 3 Ingalls, NW SE SE section 24-17-7, location.

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. No. 7 McCaughtry, NE SW NE section 21-23-2w, Billings pool, Noble County, flowed 907 bbls. of oil in six hours, making potential of 3,524 bbls. Top of Wilcox sand was 4,284 feet; total depth, 4,323 feet.

Gulf Oil Corp. and others No. 4 Frederick, C NW SE section 28-20-2w, Lucien area, had Dense at 5,035 feet; Dolomite, 5,054 feet; total depth, 5,165 feet; flowed 485 bbls. of oil in 12 hours, making potential of 911 bbls.

Phillips Petroleum Co. and Shell Petroleum Corp. No. 2 Hackett, SW NE SE section 21-23-2w, was digging cellar.

Pawnee County

Wood Oil Co. No. 1 Davis, C N half N half NE section 36-20-7, Pawnee County, had a hole full of water and was abandoned at 3,655 feet, total depth. Remington Drilling Co. No. 1-A Lincoln, C E half NW SE section 26-20-9, Keystone area, was dry and abandoned at 1,265 feet, total depth.

Lincoln County

Two new operations in Lincoln County were reported. Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 2 Arawine, SE NW SE section 35-15-2e, and same operators' No. 2 Crawford, NW NW SE section 35-15-2e, were locations in the Wellston area.

Cleveland County

Anderson-Prichard Oil Corp. No. 2 State, NW SW SE section 16-10-2w, Moore area, Cleveland County, topped second Wilcox sand at 7,200 feet and was bottomed at 7,262 feet. It flowed 751 bbls. of oil in two hours, and was given an arbitrary potential of 24,108 bbls. Gas gauged as high as 136,000,000 feet.

Alfalfa County

Olson Drilling Co. and others No. 1 Acre, C SW NE section 14-24-11w, an old wildcat in Alfalfa County, was plugged back from 7,332 feet to 6,500 feet; hole was washed out to 6,480 feet, and 5⅞-inch casing was set at 5,840 feet. The crew was bailing at 1,200 feet.

Texas County

Cabot Carbon Co. No. 1 Anna Calvert, C section 14-3n-16ecm, wildcat in Texas County, set 7-inch casing at 2,500 feet and was waiting on cement at 2,540 feet.

Okmulgee County

Reed Ramsey No. 1-A Schact, NE SE SW section 22-14-14, Okmulgee County, was dry and abandoned at 1,270 feet, total depth. Williams and others No. 5 Barnett, SW SE SE section 29-15-11, South Beggs area, had a hole full of water in Wilcox sand at 2,984-98 feet, total depth, and was abandoned.

First reports of new work in Okmulgee County: Bingham & Hewitt No. 1-A McMillan, NW NW SW section 34-14-14, drilling at 200 feet; Sheridan Oil Co. No. 1 Thompson, SE SW NW section 9-15-11, drilling at 600 feet; W. B. Pine No. 6 Sells, NE NW NW section 10-15-14, location; Reliance Oil Co. No. 7 Anthis, NE NW NW section 26-16-11, drilling at 2,921 feet.

Devonian Oil Co. No. 5 Tiger, SW NW SW SW section 24-16-12, an old well being deepened, running 5-inch casing at 2,398 feet.

Muskogee County

Beard and others No. 2 Hemminger, NE NW NW section 10-13-16, Transcontinental Pool, Muskogee County, had sand at 1,750-55½ feet; total depth, 1,767 feet; swabbed 20 bbls. of oil in 24 hours, and was completed as a 15-bbl. pumper.

Joe Paul and others No. 1 Monday, SE cor. section 4-13-16, an old well being deepened, was drilling at 1,850 feet. Robinson Oil Corp. No. 2 Brown, C N half SE NE section 18-13-16, an old gas well, was rigging up to deepen.

Tulsa County

Wright & Kunkle No. 6 Billingslea, SE cor. section 35-17-14, Tulsa County, had Lower Dutcher sand at 1,571-88 feet, total depth; was shot and pumped 10 bbls. of oil daily, completed. Gillmont Oil Co. No. 1-A Johnson, C NE NW section 18-19-12, had Arbuckle lime at 2,077 feet; total depth, 2,204 feet; water intruded; it was plugged back to 2,078 feet and was dry and abandoned.

Wagoner County

A. B. Chain and others No. 1-A Wallenstein, NE NW NW section 16-16-15, Wagoner County, was spudding.

Garvin County

W. B. Stevens and Clyde O'Dell No. 1-A Newberry, NW NW SE SW section 15-1n-3w, Robberson area, Garvin County, was bottomed at 1,734 feet; was shot and pumped 3 bbls. of oil daily. Patsy Oil Co. No. 2 Derdyn, SW SE SE section 17-1n-3w, had spudded.

Carter County

Carl Carter No. 3-A Harley, NW SW NW section 19-2s-3w, Milroy area, Carter County, was bottomed at 392 feet and pumped 8 bbls. of oil daily. Sinclair Prairie Oil Co. No. 18 Mullin, C S half SE NE section 4-4s-3w, Healdton field, was bottomed at 1,050 feet and produced 45 bbls. of oil daily. Wolverine Oil Co. No. 89 Dillard, SW SW NE section 22-4s-2w, Hewitt pool, an old well, was deepened from 2,128 feet to 2,496 feet and pumped 15 bbls. daily, recompleted.

Hefner-Bray No. 2 Perkins, SW SE SE section 4-1s-3w, was a location. Carl Carter No. 4-A Harley, SW NW SW NW section 19-2s-3w, total depth 428 feet, was rigging up to pump.

Marshall County

Kingston Oil & Gas Co.'s well on the Hefner lease, NE SE NW section 21-7s-6e, Marshall County, had dry sand at 720-45 feet and was abandoned at 910 feet, total depth.

Comanche County

E. E. Reynolds and others No. 1-A Truitt, NW SE SE section 26-2n-11w, Comanche County, pumped 3

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bbls. of oil daily from Granite Wash at 236-41 feet, total depth, completed. F. F. Stevens No. 1 Green, SE SE SW section 2-1n-13w, an old wildcat, was deepened from 1,738 feet to 1,893 feet, and abandoned.

Jackson County

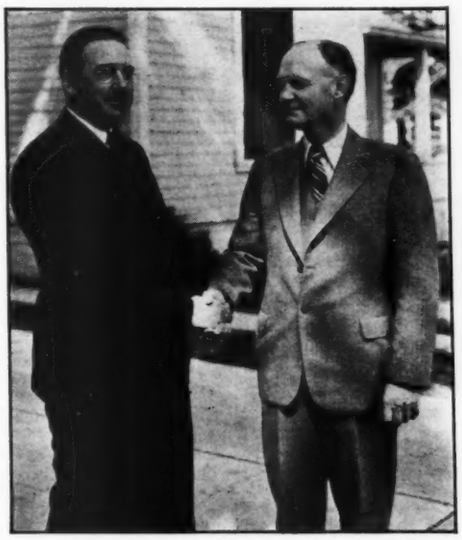
Pioneer Oil Co. No. 1 Federal Land Bank, NE NW SE section 23-1n-20w, Jackson County, had a hole full of water at 2,293-97 feet, total depth, and was dry and abandoned.

Alexander Anderson Interests Are Bought by Lane-Wells

Outright purchase of Alexander Anderson, Inc., by Lane-Wells Co. is announced. Alexander Anderson's contributions to the oil industry in his development of methods of surveying drilling wells and of directional drilling control are outstanding. Operations of Lane-Wells and its subsidiaries are international. The tools, instruments and methods of Alexander Anderson, Inc., have been used in foreign fields since 1927, but the actual field service, started by the company in 1924, has been confined to California. Under the guidance of the new management, Alexander Anderson services will be strengthened by the research activities of the Lane-Wells engineering department.

Lane-Wells recently completed one of the most modern plants of its kind. Its construction provides space and facilities for expansion. The equipment and laboratory facilities of Alexander Anderson have increased to a point where, even with the space and facilities provided by Lane-Wells, it will be necessary to erect new buildings to house them. As soon as these buildings are ready, at 5610 Soto Street, Los Angeles, all plant and service equipment will be moved from Fullerton.

The Anderson well-survey equipment, devices and patents, covering all phases of checking on the progress and completion of drilling wells, round out the stratagraph and gun perforating services offered by Lane-Wells. With the addition of the Anderson staff and equipment, Lane-Wells will be



in a position to furnish service in permanent field headquarters for drilling and production operations. No changes will be made in the personnel of the Anderson organization. Mr. Anderson plans to devote his time to other interests.

Michigan Fields

(Continued from Page 208)

the week ended July 24, 1935, when the Crystal field was at its height.

The new high weekly total also increased the number issued since January 1 to 255, or about 40 per cent more than the previous record for the corresponding period established last year when 183 had been taken out by Michigan operators.

Of the 41 permits, 28 were for new tests in the Buckeye field where operations in the northern part of state already have reached an all-time high with more than 100 rigs soon to be active. Of the 28, three were for new tests in the southeastern sector opened by Goll, Graves & Mechling, Inc., of Saginaw, with the Oard well more than a year ago, and 25 were for the northeast sector opened by the Wicklund Development Co. several months ago bringing on the record rush to Buckeye.

Of the three Oard section sites, two are within proved area and one is an eastward extension test, while about a mile south of this sector of the new major field a test was staked out in the SE quarter of section 1, Tobacco Township. The week before another important south extension test was located about halfway between the southeast Buckeye area and the McClanahan-Avery 100-bbl. extensioner in Billings Township, where the new test will be drilled.

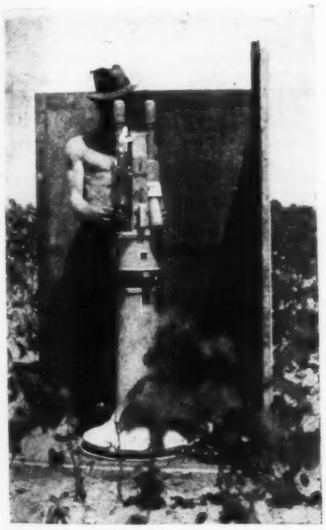
Seventeen permits for the week ended March 31 also included five for Buckeye Township, two edge tests for Jasper-Midland, four for Sherman-Isabella, and one each for Ravenna Township, Muskegon County, and West Branch Township, Ogemaw County, both in proved areas.

Wildcat Locations

Four of last week's record total of 41 locations were for rank wildcat locations: Gulf Refining Co. No. 1 Lyon, section 26, Washington Township, Gratiot County; Jacob Beck No. 2 fee, Fayette Township, Hillsdale County (southern Michigan); T. F. Caldwell, Inc. in section 10, Taymouth Township, Saginaw County, an extension test on the edge of the Birch Run Township, Berea oil field and Dion Geraldine, Trustee for the Au Sable Sportsmen's Club property in Bagley Township, Otsego County.

Four tests for gas were included in the long list, two in Ravenna-Muskegon, one in Belvidere-Montcalm and one in New Haven-Gratiot, all in proved territories.

Joseph Malloy also was reported planning a new wildcat in Logan Township, Ogemaw County, but the permit had not yet been issued.



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Eastern Field Report

By STAFF CORRESPONDENT

ORISKANY SAND YIELDS BIG GASSER IN KANAWHA AREA

PITTSBURGH, Pa., April 12.—Another deep test is starting in West Virginia. In Burning Springs district, Wirt County, the Carnegie Natural Gas Co. has started a rig on the W. C. Patterson farm which is scheduled for the Oriskany sand. It is on the Elizabeth Quadrangle, on the Burning Springs anticline about 2.1 miles north 4 degrees east of the Glen W. Roberts and others test on the Roberts lease on the Rathbone Oil Co. tract which found salt water in the Oriskany sand and is now drilling deeper and at a depth of about 5,300 feet. The elevation of the new test is 869 feet.

Another deep test in West Virginia has reached an interesting stage. Godfrey L. Cabot, Inc., and others topped the Corniferous lime at 5,994 feet, sand line measurement, in the test on the Allen Hardman farm in Center district, Calhoun County. It is located about 3 miles west of Grantsville just west of Bee Creek and is on the west flank of the Arches Fork anticline the axis of which passes through Gransville. The tools reached 22 feet in this formation and shut down to run casing on account of the numerous cavings.

SOUTHEAST OHIO

Only six operations were completed in southeast Ohio during the week. In Athens County, Brooks and Johnson completed a second test on the Dalton Snow (mapped W. N. Winner) farm in the western part of Fraction 34, Rome Township. It was drilled in the Maxton sand at 915 feet and gauges 900,000 feet a day.

In Noble County, White, McKelvy and others No. 8 Allen Addis, section 4, Jefferson Township, was practically dry at 1,036 feet.

In Washington County, the Beardmore Oil & Gas Co. completed a 170,000-foot gasser on the Bertha Winland farm on Wingett Run in section 34, Ludlow Township, in the Squaw sand at 1,398 feet.

In Newport Township, Washington County, Frank Edgar and others drilled a dry hole at 628 feet, on the Oscar Mitchell 14-acre tract in section 28. In Newport Village, same township, William Harris and others completed a 1-bbl. well on the W. G. Altwater heirs Lot 4 in the Third Salt sand at 986 feet. In this village and on the Robert Gano lot, J. W. Gorrell and others drilled a test through the Third Salt sand to 992 feet. It was dry.

SOUTHWEST PENNSYLVANIA

The deep test of William Snee and others on the Summit Hotel lease on Chestnut Ridge in South Union Township, Fayette County, made no hole during the week. The bit lost in the hole at 6,665½ feet was recovered and the well shut down so far this week. The gauge of gas from the new hole increased to about 800,000 feet a day and the gas coming from the old hole outside the 7-inch casing is showing somewhat stronger and gauges about 475,000 feet a day.

The test of the American Natural Gas Co. and the T. W. Phillips Gas & Oil Co. on the Perry S. Davis farm 1 mile south of Prospect, Butler County, is drilling at 5,515 feet after recovering a bailer lost in the hole. The top of the Corniferous lime was at 5,420 feet. This well is due in this week in the Oriskany sand.

In Mount Pleasant Township, Washington County, Norwood Johnston and others' test on the James McBurney farm is still down with a fishing job.

In Beaver County, the test of John T. Galey and others on the Minnie Weigle heirs farm in South Beaver Township is drilling at 1,300 feet. This is scheduled for the Oriskany sand. On the Beaver Falls Airport Corp. lease in this township, A. J. Wise, Jr., and others are drilling at 3,140 feet.

In Peters Township, Washington County, R. M. Duden and others' test on the McDowell heirs farm started at 1,000,000 feet of gas at 2,325 feet, the Thirty-foot sand.

In Greene County, the Equitable Gas Co. started to deepen No. 1 C. L. Stewart in Center Township from 1,996 feet the Big Injun sand. It was drilled to 2,054 feet but the gas at 1,961-1,975 feet increased to 126,000 feet a day and work was postponed to use the gas.

In Wayne Township, H. D. Freeland & Co. are skidding the rig from the No. 3 location in which the tools were lost on the D. L. Freeland farm for a new start. The depth of the hole was 2,025 feet. In Richhill Township, Burley Wright and others are down 2,640 feet in the No. 2 on the Joseph McCracken farm. The Fifty-foot sand was at 2,527-2,557 feet with 500,000 feet of gas at 2,534-2,542 feet.

In Springhill Township, Greene County, Union Gasoline & Oil Corp. is drilling at 1,800 feet on the Lloyd Strope farm. Penn Ohio Oil & Gas Co. has reached 3,172 feet in deepening the No. 2 on the H. H. Milliken farm. In Aleppo Township, Ross Burns is down 2,380 feet on the John Phillips farm.

In Center Township, Greene County, the South Penn Oil Co. has reached a depth of 2,490 feet in the Samuel Harvey No. 10. Casing (6⅝-inch) was run to 2,334 feet. Charles Mong and others is down 1,515 feet on the J. L. Metz and others lease.

In Morris Township, Washington County, the Manufacturers Light & Heat Co. is drilling at 2,818 feet on the W. E. Craft farm. The Gantz sand was at 2,560-72 feet with a show of gas at 2,561 feet; the Fifty-foot sand 2,585-2,660 feet with a show of gas at 2,618 feet; Thirty-foot sand 2,672-2,722 feet with a show of gas at 2,697 feet; the Gordon sand was topped at 2,756 feet with a hole full of water at 2,795-2,815 feet.

In South Franklin Township, Washington County, the Carnegie Natural Gas Co. is drilling No. 2 on the C. T. Dodd farm at 1,882 feet, and has reached a depth of 719 feet in the Alberta Iams No. 2. The Dunn Mar Oil & Gas Co. is down 1,900 feet in J. T. Baldwin No. 2.

In Amwell Township, Washington County, South Penn Oil Co. is drilling No. 4 J. Q. Zimmerman and is down 1,160 feet. In Peters Township, Henderson & Co. are drilling at 1,375 feet on the Bell heirs farm. The Carnegie Natural Gas Co. is at 1,402 feet on the George Douglass farm. In Jefferson Township, Fayette County, this company is drilling at 1,400 feet on the George J. Elliott farm.

In Beaver County, Murray & Miller are completing a small producer on the S. Carson farm in Hanover Township. In Greene Township, the South Penn Oil Co. is drilling at 900 feet on the M. Nickle lease No. 1.

In Allegheny County, A. Wally & Co. are drilling at 1,000 feet on the Grindler Brothers lease in Ross Township. Keil & Co. are drilling the test on the Grottinger heirs farm in Hampton Township. In Franklin Township, W. H. Say and others are down 300 feet in the test on the Mrs. Mary Rosensteel farm.

WEST VIRGINIA

The second largest gas well in West Virginia was completed by the Columbian Carbon Co. on the Ida Hughart farm in Elk district, Kanawha County. Reported in the sand last week and showing then at a depth of 5,041 feet 1,000,000 feet of gas, it was drilled down to 5,057 feet and shot with 120 quarts. It now gauges 15,500,000 feet a day. This is outranked only by the original test on the Ahaz Spencer farm in Poca district which when brought in gauged nearly 17,000,000 feet a day.

In this district, the Columbian Carbon Co. topped the Corniferous lime at 4,840 feet in the test on the James R. Jones farm and is drilling at 4,850 feet on the J. C. Jordon farm; 4,775 feet on the Minia F. Stauffer farm; 2,773 feet on the W. L. Burdette No. 2; 1,160 feet on the R. L. Wolfe farm; 1,340 feet on the John Summers, Jr., farm; spudding in the test on the Octavia Pauley farm; and 700 feet on the Samuel G. Jones farm. Benedum & Trees will abandon the test on the Mary Slack farm after finding only 150,000 feet, initially, in the Oriskany sand, total depth 4,992 feet.

In Poca district, George W. Lepiere topped the Oriskany sand at 4,800 feet in the test on the J. W. Legg farm and is only a few feet in the sand. Godfrey L. Cabot, Inc., has the rig standing for their western test on the J. E. and M. D. Good farm and in Union district one for the test on the Sarah Ann Null farm.

One new location was made in Elk district. The Columbian Carbon Co. has a location for a test on the Mandy Wolf farm, elevation 969.0 feet. It is just north of the G. M. Wolf farm.

In Malden district, Kanawha County, two locations were made. The Columbian Carbon Co. made a location on the W. D. Lewis tract which offsets the South Penn Oil Co. No. 2 Kate Scott. The United Fuel Gas Co. made a location on the Georges Creek Land & Mining Co. lease which will offset the South Penn Oil Co. No. 3 Kate Scott.

Miscellaneous Operations

In Cabell County, the National Gas Corp. completed No. 2 F. L. Whitaker farm in Guyandotte district as a gas well at a depth of 2,925 feet; Brown Shale 2,575-2,905 feet, with gas gauging 265,000 feet a day at 2,575-2,580 feet.

In Gilmer County, Kenneth F. Ermich and others deepened the test on the A. E. Goff farm to the Big Injun sand, depth 1,800 feet, and it is a gas well gauging 300,000 feet a day.

In Ritchie County, the Oil & Gas Co. completed a No. 2 on the Cokley heirs farm in Union district at a depth of 1,700 feet, the Salt sand, and it is a gasser good for 250,000 feet a day. In Murphy district, the Southern Oil Co. deepened the No. 11 on the Alvin Wince farm to the Injun sand, 1,937 feet, and it is a gas well gauging 148,000 feet a day. In Clay district, Lucas & Mahaney drilled the test on the M. M. Lambert farm to the Berea sand, 2,490 feet, and it is a dry hole.

In Upshur County, the Cumberland & Allegheny Co. completed a test on the C. W. Teters farm in Buckhannan district at a depth of 4,060 feet. The Benson sand was at 4,010-4,028 feet with about 200,000 feet of gas at 4,011 feet.

In Wirt County, W. C. Patterson completed a No. 25 on the C. E. Vandevender farm in Clay district in the Cow Run sand at 400 feet it it is showing for 2 bbls. a day.

Outside Deep Tests

In Burning Springs district, Wirt County, Godfrey L. Cabot, Inc., has reached a depth of 5,308 feet in the deep test on the Walter Hoffman 53-acre tract. At present a cave is being cemented at that depth. In Grant district, Hancock County, John T. Galey is drilling at 4,300 feet in the test on the Rachael Talbott farm.

New Work

In Braxton County, the Pittsburgh & West Virginia Gas Co. has a location for No. 3 Ramsey and Bender lease in Birch district, and one for No. 2 John Hall. This company has also made a location for a No. 6 G. B. Howell, same district.

In Calhoun County, the Hope Natural Gas Co. has a location for No. 2 Tell McDonald, in Sherman district. In Clay County, the Virginian Gasoline & Oil Corp. has rig up for No. 40 Brown, Swan, Goshorn and Geary lease.

In Jackson County, Waker Benre Oil Co. has a location for No. 5 J. W. Kelley and others in Washington district. The other wells are fair producers. The Lima Gas Co. is down 400 feet in a No. 2 and has a location for a No. 3 on the B. F. Litten farm.

Locations were made in Kanawha County for Cambridge Gas Co. No. 12 Garnet Wisman in Washington district; in Lincoln County, Harvard Gas Co. No. 21 on the R. E. Pauley farm in Washington district; in Sheridan district on Upper Two Mile, Simmerson & Swan on the J. A. Thompson farm.

In Marshall County, the Hope Natural Gas Co. will drill a No. 3 on the Joshua Yoho farm in Liberty district. In Monongalia County, the Convex Glass Co. is deepening No. 2 Thornton Rober farm in Cass district and has reached 1,600 feet.

In Mason County, J. C. Blair, Agent, is drilling at 1,775 feet in a test on the Mary Conrad and others lease in Hannan district. In Putnam County Veleair C. Smith has a rig on the Gibson tract in Teays Valley district.

In Ritchie County, B. F. Gilmore made a location on the W. F. Moore farm in Clay district. In Murphy district, W. H. Mossor will drill on the B. Z. Bee lease. In Union district, Hanaghan & Hanlon, Inc., have a location for No. 5 George Hammer Estate.

In Tyler County, the Annilline Oil & Gas Co. made location for No. 2 Mrs. O. J. Wells and heirs in Lincoln district. In Wayne County, the United Fuel Gas Co. will drill on the F. D. Adkins farm in Union district, and on Grassy Lick Branch. In this district the Mountaineer Gas Co. will drill on the L. M. Bowen farm in Grassy Lick.

West and North Texas

By
L. E. BREDBERG

HOCKLEY COUNTY DISCOVERY FLOWS 114 BBLS. IN ONE HOUR

FORT WORTH, Tex., Apr. 12.—The most recent discovery in West Texas, Texas Co. No. 1 Slaughter, located in Labour 83, League 38, Zavalla County School Lands Survey, in the southwest corner of Hockley County, which is opening the first oil production for that county, showed sulfur water this week when deepened from 5,025 feet to 5,030 feet and had to be plugged back to 5,023 feet to shut it off preparatory to acidizing after running tubing.

The first oil was logged at 4,968-73 feet, with increases at 4,980-5,025 feet, bottom of the hole, according to steel line measurement which corrected it from 5,022 feet as reported last week. Before deepening it headed 114 bbls. of oil in one hour when opened after a three-day shut in. Acid will no doubt increase its potential considerably as it did the Cochran County discovery about 11 miles west by north of the Hockley well.

Another test is scheduled, about 11 miles southeast of the Hockley strike. R. L. Foree of Dallas, and associates, will drill on the W. E. Poole ranch in the northwestern corner of Terry County, in the C NE section 54, Block D-11, P.S.L. Survey. Location is about 8 miles northwest of Brownfield and is an extreme wildcat. The operators have a block of some 9,500 acres in the area. Major oil companies have purchased protection under the block on which the test is to go to 5,500 feet.

Dawson Test

About 1 mile south of the small discovery in northwestern Dawson County, brought in by Ray Albaugh and others, but which is still reported as not being completed, E. L. Wilson of Dallas, and others, will test Texas Land & Mortgage Co. holdings with a well in the SE quarter section 45, Block M, E.L.&R.R. Survey, which will be considered as a wildcat test. The discovery well pumped only 15 bbls. of oil and 3 bbls. of salt water in six hours at total depth of 5,038 feet.

Another Gaines Wildcat

The Argo Oil Corp. is to drill a wildcat in the NE quarter of section 2, Block A-7, P.S.L. Survey, about 10 miles west of the Carter test in the northwest corner of Gaines County, and about 6 miles south of a dry hole. Location is in Gaines, about 2 miles from the Yoakum County line. The company has a large block in the area, Magnolia, Atlantic, Continental and Texas and other companies holding leases surrounding the block.

Andrews Wildcat

W. Hanagan of Midland has staked location for a wildcat near the Gaines County line in northwestern Andrews County, in the NE quarter section 16, Block A-26, on W. F. Scarborough ranch. Same operator's No. 1 Lotus Oil Co., in section 18, Block A-48, P.S.L. Survey, in the western part of the county, is shut down at 5,002 feet, appearing as a dry hole. The same operator recently abandoned a test about 2½ miles south of the new location. Total depth was 5,020 feet.

Humble Oil & Refining Co. abandoned its No. 1-B J. S. Means, in section 11, Block A-45, about 1½ miles south of the nearest production in the Means field in northeastern Andrews County. This test defines the south or southeastern side of the field. Total depth is 5,226 feet, elevation 3,158 feet.

The Sinclair Prairie Oil Co. has staked location for another test in southern Andrews County, near the Ector County line and near a small discovery it is now producing. The new test will be in the NE cor. of section 11, Block 44, Township 2n, T.&P. Survey, about 1 mile west of its discovery, which swabbed 45 bbls. per day at 4,300 feet, after a shot. The area is about 3 miles northwest of a couple of small producers in northern Ector County, and about 7 miles southeast of the Fuhrman field.

Ector Extension

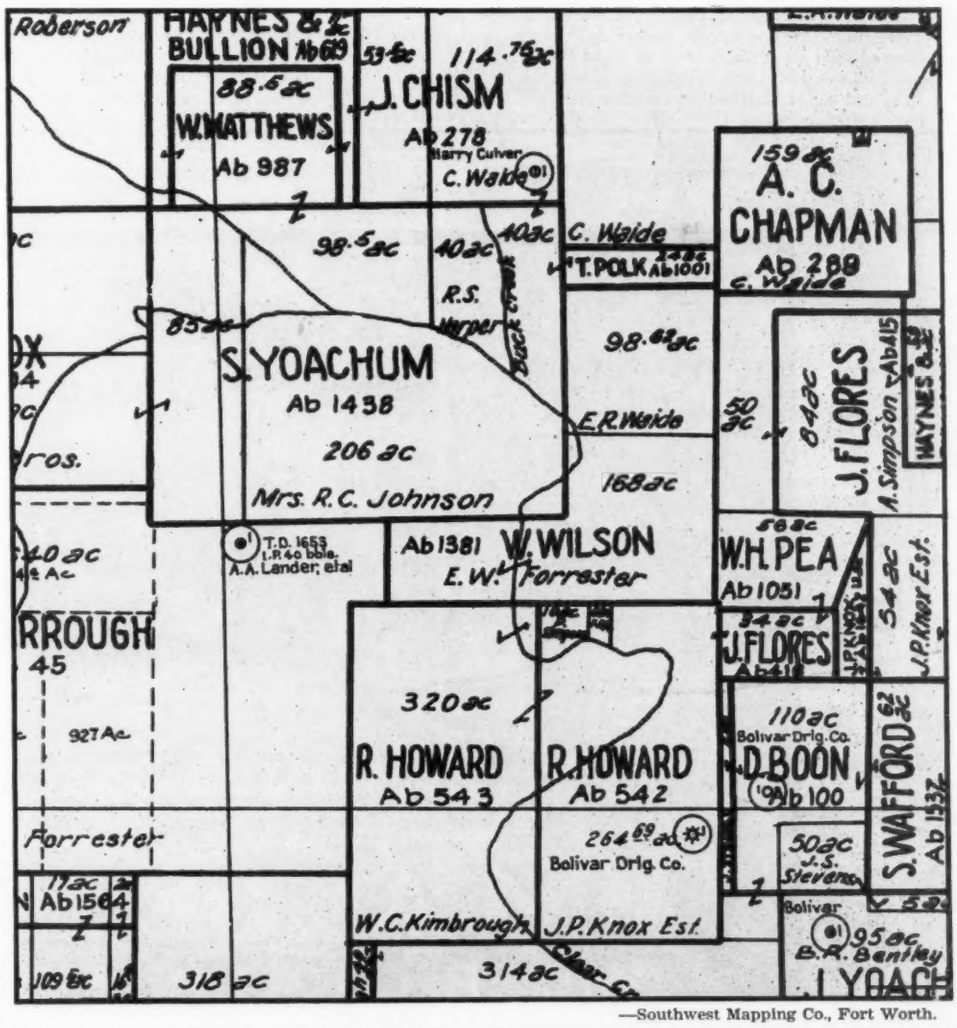
The Gulf Corp. made another extension to the Goldsmith-Cummins field this week. Its No. 14 Goldsmith, NW cor. section 5, Block 44, Township 1s, T.&P. Survey, over a mile west of the nearest production in the north end of the Goldsmith field, and the same distance south of production in the Cummins-Scharbauer area, flowed 340 bbls. of oil on a three-hour test at a total depth of 4,234 feet, in lime. It is to be deepened 6 feet and acidized. At the same time the field was being extended to the west, the Phillips Petroleum Co. was extending it to the east with its No. 9 Cowden, located in section 12, Block 44, Township 1s, T.&P. Survey. At a total depth of 4,152 feet it flowed at the rate of 344 bbls. in 24 hours after acidizing with 5,000 gallons. This is one of the smaller wells of the field, denoting perhaps, the proximity of the eastern edge of the field.

Third Ordovician Producer

The Gulf Oil Corp., which last year opened the second Ordovician producing area for the Permian Basin with No. 1 Waddell in Sand Hills field in western Crane County, is now completing its third Ordovician test in that field. The company's No. 4 Waddell flowed 4 bbls. of oil per hour, with 2,000,000 feet of gas, when a drill-stem test was made in the Simpson at 5,800-5,989 feet. The Simpson was topped at 5,824 feet, about 50 feet higher than in the discovery well in the field, and the oil is said to be coming from a Dolomite instead of a sand, as in the first producer. The oil is also of a higher gravity, testing 43.5 degrees, whereas the oil in the discovery well tests around 34 gravity. The discovery, which is about one-half mile west of this new producer, made only a pumper, but the new well will no doubt flow. There is one other Simpson producer in the field, about 2 miles northeast of these two wells.

Dry Hole

The Landreth Oil Corp. abandoned its second attempt for production in the area about 7 miles southwest of Seminole in Gaines County, where several months ago it brought in a small producer in section 22, Block A-21. The second test is about 1 mile northeast of the discovery, and was given up as a failure at a total depth of 5,013 feet. Elevation is 3,252 feet. This is the second failure drilled north of the Kirk discovery.



—Southwest Mapping Co., Fort Worth.

Location of gas discovery (now depleted), oil discovery and other tests drilling as a result of the two strikes a couple of miles west of Bolivar in Denton County. Lander and others No. 1 E. W. Forrester opened the first oil production in the county

and hedges the field in on that side, with a dry hole also hedging the producing area on the south, about 2 miles.

Reeves County Activity

Only two tests are now drilling in Reeves County, but during the past several months, especially since the Mason Oil Co. opened another Delaware sand field in Loving County, to the east and northeast, leasing activities have been running high in Reeves and several wildcat tests are being planned for this far western county. Several major companies hold blocks in the county and are seeking more acreage.

Potential Pool

Six miles north and east of Hawley a wildcat of Fain-McGaha, Inc., No. 1 Claud Lewis, in section 37, Block 15, T.&P. Survey, bailed at the rate of 2 bbls. per hour from sand (Bluff Creek) logged at 1,925-30 feet. The operators are now cementing casing to the top of the sand preparatory to testing. Total depth of the hole is 1,935 feet.

NORTH TEXAS

Bob Elmore of Fort Worth is drilling a 1,600-foot Canyon test 5 miles northwest of New Castle in Young County. Location is on the George estate, in section 106, Block 1,190, T.E.&L. Survey. The test is now down below 225 feet, drilling ahead.

Denton Development

Denton County has joined the list of North Texas producing counties with one oil producer completed, two other potential producers coring and a couple of tests drilling, all in an area surrounding the small town of Bolivar, 14 miles northwest of Denton, the county seat.

A. A. Lander, Inc., and others are completing No. 1 E. W. Forrester, J. B. Bauraux Survey, about 2½ miles northwest of Bolivar. This well logged a showing of oil at 1,647-51 feet in sand and sandy lime, and the hole filled about 100 feet with oil per hour, filling between 300 and 400 feet. Tubing was being run preparatory to rigging up pumping equipment. The well is estimated good all the way from 25 to 50 bbls. of 40 gravity oil per day. Little gas is showing with the oil.

The drilling of this well was started after a small gas well, about 1½ miles northwest of Bolivar, was brought in a couple of months ago. This gasser, however, is now depleted. The Bolivar Drilling Co. drilled the gas discovery and is also drilling a second well about one-half mile southeast of the depleted gasser and on the B. R. Bently farm, in the J. Yoachem Survey. Casing was set at 1,720 feet in this test and it is now swabbing saturated lime, logged at 1,726 feet.

About 1 mile northwest of the Lander well, Culver and others are drilling on the Waide farm, in the S. Yoachem Survey. This test topped a saturated sandy lime at 1,751 feet and is now coring ahead, missing the Lander pay.

The above discovery and tests are drawing much attention to the area, especially of independents desirous of developing shallow production.

Deep Test

The Texas Co. has acquired 1,593 acres of leases from S. S. Alexander of Fort Worth, in a 3,000-acre block in Cooke County, but near the Grayson County line, and is to spud a test by May 1. Location is expected to be on the Marshall land, in the A. Burns Survey, about 6 miles north of the town of Dexter. The Texas Co. checked the area with geophysical instruments.

Grayson Producer

The Denver Producing & Refining Co. No. 1 Singletary, located in the Charles Quillen Survey, about 2 miles southeast of Collinsville in the southwest corner of Grayson County, has proven the first deep producer for that county. It was reported pumping 54 bbls. of oil the first day. The oil tested 27.5 gravity, and was coming from sand topped at 3,837 feet. Plugged back total depth is 3,885 feet.

This same company is now planning two more deep tests in the area, just east of the Cooke County line. One 4,000-foot test, which may be carried to 6,000 feet, will be located just north of Whitesboro. The other will be located on a block of 5,000 acres, south of Whitesboro, and will also go to 4,000 feet.

Bryson Bonus

During the week the Bennett Petroleum Co. sold 204 acres of leases in the Bryson field, Jack County, for a reported $1,000,000 consideration, half cash and half out of oil. Mar-Tex Oil Co. was the purchaser. There are 17 producing wells on the leases and the new owner is scheduled to drill 10 more. The daily allowable from the 17 wells is about 1,100 bbls. Mar-Tex already had production in the field and the Bennett Petroleum Co. retains several leases, which it will develop.

Extending Deep Pay

The Davis Oil Corp. No. 1-A Waggoner Estate, located in section 36, Block 4, H.&T.C. Survey, in the Rock Crossing Pool, Wilbarger County, is promising the extension of the new deep pay zone in that field by another 2½ miles to the west of the recent deep strike of the Phillips Petroleum Co. which made a good well at 3,076 feet, in lime. This test logged saturated lime at 3,182-97 feet and has run pipe preparatory to acidizing and testing. The Phillips discovery was not acidized, and the northeast offset to it, drilled by the Humble, was not acidized. If the Davis test makes a well it will prove considerable acreage to deep production and operators throughout the area will no doubt sink deeper tests or deepen small old wells in search of this new flush production.

Young Discovery

The Rathke Oil Co. and others No. 1-A C. W. Johnson, about 2½ miles southeast of Graham in Young County, and about one-half mile west of a heavy gas and distillate well drilled in by Eppenauer Drilling Co. in January, has made but a small oil producer from the Marble Falls lime logged at 4,230 to 4,264 feet. It was given a 70-quart shot after plugging back from 4,290 feet to shut off water, and made only 35 bbls. on a potential test. However, it does prove that this formation carries oil in this area and not gas and distillate alone.

PANHANDLE

Wildcatting, which has been increasing rapidly in all sections of Texas, and in other states within the past year, has also entered the Panhandle district within the past few months, in a district in which there has been little exploration in the past five years. A number of scattered tests have been sunk recently, one drilled by the Phillips Petroleum Co. below 7,000 feet, being the deepest test ever drilled in the district. Another test, in Hansford County, proved a gas discovery, while

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several semiwildcats proved extensions to the Granite Wash and Dolomite producing fields.

The Indian Territory Illuminating Oil Co. has entered the district from a wildcat standpoint and has just recently taken a block of some 11,000 acres in Southwest Sherman County, an extreme wildcat territory. Ten-year leases were taken, but the block will no doubt be tested long before they expire.

WEST TEXAS COMPLETIONS

Andrews County

Humble Oil & Refining Co. No. 1-B Means, dry and abandoned 5,226 feet, elevation 3,158 feet.

Crane County

A. W. Cherr and others No. 1-B Ed Hughes, 2,357-66 feet, acidized, 643 bbls. oil and 45 bbls. water per day on pump. Donnelly and others No. 1-B Sapp, 2,045-3,130 feet, 705 bbls. oil, 6 per cent basic sediment on pump.

Ector County

Broderick & Calvert No. 2 Johnson, 4,077-4,184 feet, shot, 780 bbls. Humble Oil & Refining Co. No. 3 Cowden, 4,170-4,270 feet, 767 bbls. after acidizing. Landreth Production Co. No. 1-G Scharbauer, 4,154-4,235 feet, acidized, 684 bbls. Manson Oil Co. No. 2 Cummins, 4,222-50 feet, shot and acidized, 788 bbls. Shasta Oil Co. No. 1-A Scharbauer, 4,169-4,223 feet, acidized, 1,876 bbls. Shell Petroleum Corp. No. 2 University, 3,595-3,700 feet, shot, 238 bbls. on pump. Sinclair Prairie Oil Co. No. 2-A Johnson, 4,090-4,345 feet, plugged back to 4,173 feet, shot, 134 bbls. on pump. Tide Water Associated No. 2 Wight, 4,160-4,298 feet, shot, 1,162 bbls.

Gaines County

Landreth Production Co. No. 1 Cobb, dry and abandoned, 5,013 feet, elevation 3,252 feet.

Glasscock County

Continental Oil Co. No. 27-S Settles, 1,232-65 feet, 515 bbls. on pump; No. 28-S Settles, 1,207-43 feet, 432 bbls. on pump.

Pecos County

Young Petroleum Co. No. 1 Bailey, dry and abandoned 2,081 feet, elevation 2,536 feet.

Upton County

J. W. Ellis No. 9-B Robbins, 2,223-50 feet, acidized, 818 bbls. British American Oil Co. No. 1 Robbins, 2,219-44 feet, acidized, 898 bbls. Gulf Oil Corp. No. 24 Crier-McElroy, 2,735-2,842 feet, shot, 3,720 bbls. Basin Oil Properties No. 1-C Baker, 2,206-40 feet, acidized, 722 bbls. on pump; No. 1-E Baker, 2,205-32 feet, acidized, 684 bbls. on pump. Texas Pacific Coal & Oil Co. No. 7 Reese, 2,625-30 feet, acidized, 717 bbls. on pump.

Ward County

Black & Hedrick No. 2 Snelson, 2,147-2,222 feet, 92 bbls. W. J. Dobbs No. 2-B Bray, dry and abandoned 2,219-44 feet, acidized, 989 bbls. Gulf Oil Corp. No. 24 Estes, 2,531-2,620 feet, shot, 1,458 bbls. Humble Oil & Refining Co. No. 13 Richter, 2,440-2,605 feet, shot, 2,008 bbls. J. P. Kittrell and others No. 3 Stewart, 2,410-65 feet, shot, 173 bbls. through one-half inch choke. Sinclair Prairie Oil Co. No. 8 Hill, 2,375-2,505 feet, shot, 308 bbls. Stanolind Oil & Gas Co. No. 3 Cannon, 2,501 feet, plugged back to 2,350 feet, dry and abandoned.

Winkler County

Emperor and others No. 1 DeSpain-Halley, 2,711-2,858 feet, 1,054 bbls. Gulf Oil Corp. No. 7 Clapp, 2,840-3,110 feet, shot, 874 bbls. Humble Oil & Refining Co. No. 2-B Colby, 2,770-3,150 feet, shot, 486 bbls.; No. 18 Howe, 2,802-3,010 feet, shot, 2,143 bbls.; No. 5 McCutcheon, 2,790-3,010 feet, shot, 515 bbls. Illinois Oil Co. No. 1-D Scarborough, 2,950-3,074 feet, shot, 47 bbls. on pump. Magnolia Petroleum Co. No. 67 Walton, 2,805-2,942 feet, shot, 1,320 bbls. Sayre Oil Co. No. 7-C Howe, 2,800-2,990 feet, shot, 948 bbls. J. R. Sharp No. 2 McCutcheon, 3,230-3,430 feet, shot, 460 bbls. Sinclair Prairie Oil Co. No. 16-C Walton, 2,787-2,975 feet, shot, 1,440 bbls.; No. 15-B Walton, 2,875-2,975 feet, shot, 1,089 bbls. Tide Water Associated No. 14 Walton, 2,820-2,940 feet, shot, 952 bbls.

NORTH TEXAS COMPLETIONS

Archer County

Golding & Cochran No. 13 H. E. Brown, 1,177-88 feet, 150 bbls.; No. 14 H. E. Brown, 1,178-86 feet, 15

(Continued on Page 231)

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North Louisiana, Arkansas

SCHULER AND LISBON FIELDS ARE IMPORTANT DISCOVERIES

By MITCHELL TUCKER

SHREVEPORT, La., April 12.—The opening of the Schuler field in Union County, Arkansas, appearing to be of major importance, topped the developments in a very active week for the Ark.-La.-Tex. area just ended. Other important extensions or new discoveries appeared to be in the making in several localities. Important new wildcat locations were staked, indicating continued activity throughout the summer months.

Schuler Field—Union County, Arkansas

Situated upon an anticlinal structure, mapped as a geophysical high by seismograph last summer, using the big lime as the reflecting zone, and indicating 250 feet of closure, Lion Oil Refining Co. drilled its No. 1 Morgan, section 18-18-17, to a total depth of 5,559 feet to open the Schuler field. Production is from a sand member of marine type in the Lower Travis Peak, and well gauged 60 bbls. hourly through three-fourths inch choke, tubing pressure 1,400 pounds, casing pressure 1,900 pounds, gas estimated at about 3,000,000 feet. After testing the well through various size chokes, gas production began to increase, and indications pointed to the fact that the casing seat may have failed. Similar testing through three-fourths inch choke five days after the well was brought in gauged 32 bbls. hourly, with 9,000,000 feet of gas. Original gravity of the Schuler oil tested 37, then rose to 41, and on last test with increased gas production the crude indicated a gravity of 49. Lion Oil holds about 7,000 acres in this block, and owns one-half interest in the Morgan discovery well, which was taken from Phillips Petroleum Co. on farm-out basis. Three new locations here have been announced.

Deep Rodessa Tests

Four deep exploratory tests of the Rodessa structure, all below present producing level, are holding the interest of all connected with that field.

Marr & Perkins No. 1 Hunter, section 13-23-16, cored the Pettit lime with showings of oil and good porosity from 6,545-55 feet, but continued deeper drilling and topped the Travis Peak red beds at 6,673 feet. Drilling continues in this horizon below 8,520 feet.

In the gas producing area south of the Rodessa townsite, R. W. Norton No. 1 Payne, section 27-23-16, a proposed 10,000-foot test, is coring below 8,940 feet, after reported showings at about 8,600 feet.

United Gas Public Service Co. No. 5 Young, NW section 27-23-16, with original objective the present producing level at Rodessa, missed that pay entirely, and operators have elected to carry the well down for a deep test. This well is thought to be situated at the point of gas-oil contact, as the Young oil sand was found to have pinched out here. Coring continues below 6,390 feet.

United Gas Production Co.'s deep test on the Cass County side of the field, J. W. Land, R. Potter Survey, topped the Pettit lime at 6,340 feet, and the Travis Peak at 6,664 feet, and has set 7-inch casing at 6,546 feet preparatory to deeper drilling, total depth 6,564 feet.

Rodessa Salt Water

Most recent check reveals that 95 wells are making salt water along with the oil in the Rodessa field, 14 on the Cass County side and 81 on the Louisiana side. Highest water percentage of any one well in Louisiana is 85, and in Cass County, 14.

Marion County, Texas

The once highly regarded Lodi wildcat, Arkansas-Louisiana Gas Co. No. 1 W. S. Ford, Charles Grayson Survey, continues to test under varying conditions, but as yet has not made a substantial producer. After being shut in for 12 hours, tubing pressure rose to 950 pounds, and casing pressure 100 pounds. When opened, the well flowed 80 bbls. in 12 hours through one-half inch tubing choke, with 15 per cent basic sediment and 625,000 feet of gas, tubing pressure 110 pounds, casing pressure 300 pounds. Testing continues with various size chokes.

The Jefferson discovery well, Holcomb, Thomason, Flesh and Hootkins No. 1 Henderson, 7 miles southwest of Lodi, reset packer at 5,970 feet and flowed 95 bbls. in 24 hours through 1/32-inch Otis choke, tubing pressure 50 pounds, casing pressure 2,350 pounds, total depth 5,996 feet. Experimental testing will be continued at this point.

The Arkansas-Louisiana Gas Co. No. 1 Laura McIntosh, William Edminston Survey, has tested practically dry during the past week, following all swabbing and air-jamming tests. The 7-inch casing was set above porous section of the Gloyd sand where production was expected. Operators now plan to perforate in stray gas sands logged above the Gloyd.

The Bauman, Dunn & Fisher No. 1 Chatten, A. D. S. Coy Survey, was completed as a gas and distillate well, gauging as high as 50,000,000 feet, tubing pressure 2,150 pounds, total depth 5,956 feet.

Rodessa Completions

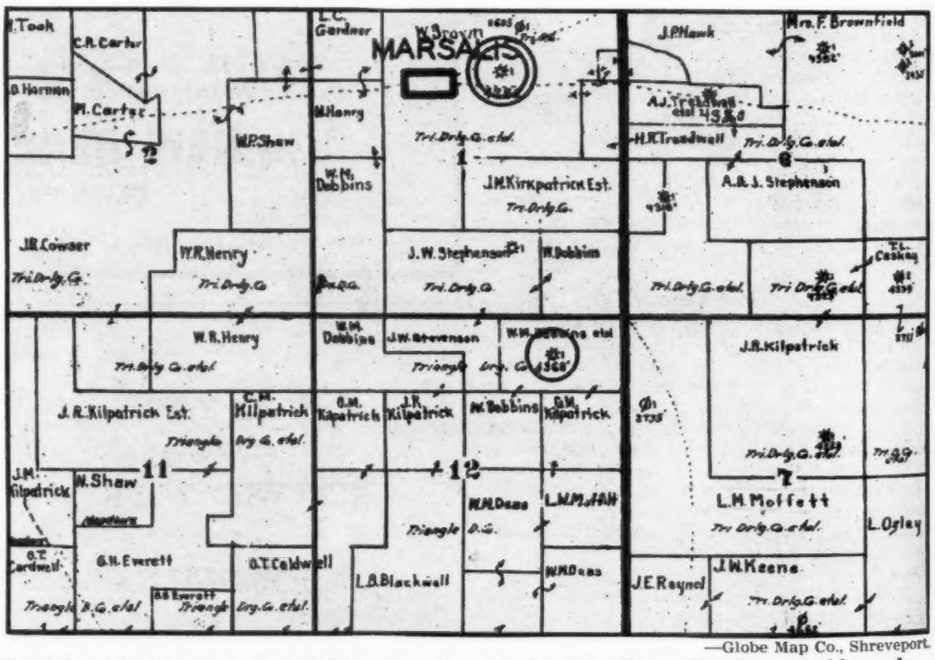
Gulf Production Co. No. 4 Dawson, Rives Survey, flowed 294 bbls. in 24 hours initially, total depth 6,006 feet. Magnolia Petroleum No. 5 Lewis and Wicks, Cass County School Survey, flowed 12 bbls. hourly after 2,000-gallon acid charge, total depth 6,080 feet. R. W. Norton No. 2 Davis, H. Holbert Survey, flowed 520 bbls. daily through one-fourth inch tubing choke, 3,000 gallons of acid, total depth 6,000 feet. Phillips Petroleum Co. No. 8 Farrier, William R. Myers Survey, flowed 444 bbls. initially on 24-hour test, one-fourth inch tubing choke, total depth 6,065 feet. United Production Co. No. 4 Bivens Unit, J. Davenport Survey, flowed 16 bbls. hourly through one-fourth inch tubing choke, total depth 5,986 feet. Same company's No. 1 Bostick, J. Coleman Survey, gauged 16,500,000 feet of gas, rock pressure 2,340 feet, total depth 5,684 feet. Same company's No. 1 J. D. Parker, J. Coleman Survey, also in the gas producing area, gauged 6,000,000 feet, 1,930 pounds rock pressure, total depth 5,695 feet. Same company's No. 4 S. B. Willis, W. Robinson Survey, flowed 16 bbls. an hour, one-fourth tubing choke, total depth 6,035 feet. No. 5 S. B. Willis, same survey, flowed 16 bbls. hourly through one-fourth inch tubing choke, total depth 6,025 feet.

Lisbon—Claiborne Parish

With 14 drilling wells and four wells rigging up, the Lisbon field continues the most active area in Louisiana. Several new locations have been announced. All estimates of Lisbon reserves place a conservative recovery at 5,000 bbls. per acre. With a possible 8 square miles that may be productive within 50 feet of closure, a reserve of 25,000,000 bbls. is not considered unlikely by informed men of this territory. Lisbon is regarded as the most important oil discovery in North Louisiana since Rodessa about two years ago.

Making total completions at Lisbon four, P. W. Woodruff and others No. 1 H. E. Patton, S half SW NE section 36-21-5w, flowed at the rate of 30 bbls. hourly through open tubing after a 2,000-gallon acid charge, total depth 5,312 feet, plugged back from 5,368 feet.

Situated about 2½ miles west of Lisbon, on the western flank of the structure, Lisbon Oil Co. No. 1 J. W. Burgess, NE SE NE section 3-20-5w, failed to obtain oil saturation in the Pettit, and topped the Travis Peak at 5,406 feet. Showings of oil were noted in sand members of this formation from 5,428 to 5,433



—Globe Map Co., Shreveport.

North Louisiana's newest oil field, on northern flank of the Sugar Creek gas field, producing 29 gravity oil from an upper-sand member of the Travis Peak, total depth 5,984 feet, after having been deepened from the gas producing zone. Double circle indicates Sugar Creek Syndicate No. 1 Brown, the discovery well, and single circle indicates second gas well now being deepened to the oil zone

feet and 5,437 to 5,444 feet. The hole was deepened to 5,800 feet without other encouraging showings, and has been plugged and abandoned at this depth.

Caddo Parish

Gulf Refining Co. elected to abandon No. 1 Hatcher, section 11-17-15, at 9,244 feet last week after running Schlumberger and failing to note any promising zones. This well, the deepest ever drilled in northwest Louisiana, is just west of the Shreveport city limits on Gulf's extensive Cross Lake block. The well made geological history for North Louisiana, topping the Travis Peak at 5,997 feet, the Lower Marine beds at 8,240 feet, and coring highly porous sands in the marine beds 8,648-8,760 feet, with no saturation.

Stanolind Oil & Gas Co. No. 120 Dillon, SE NE section 14-21-15, was a routine completion in the Pine Island field, pumping 150 bbls. per day, total depth 1,665 feet.

J. B. Hutchinson No. 2 Storey-Phillips, SW NE NW section 28-16-15, found the Blossom sand dry on flank of Caddo field, 2,165-2,700 feet, and abandoned the hole at the latter depth.

E. L. Butts No. 1 Caddo Leevy Board, section 8-20-16, failed to find saturation in the Nacatoch sand, Caddo field, and hole has been abandoned as dry, total depth 962 feet.

Sugar Creek—Claiborne Parish

Oil production on the flank of another of North Louisiana's gas fields was assured last week at Sugar Creek, as Sugar Creek Syndicate No. 1 W. Brown, W half NE quarter section 1-19-6, flowed about 10 bbls. hourly after being acidized with 2,000 gallons and re-acidized with 5,000 gallons. Production is from an upper sand member of the Travis Peak, testing 29.3 gravity. On later test the well flowed 190 bbls. in seven hours through one-fourth inch tubing choke, casing pressure 600 pounds, tubing pressure 100 pounds, total depth 5,984 feet.

The same operators are preparing to drill another of their Sugar Creek gas wells from the Oolitic lime zone of the Lower Glen Rose to the oil horizon in Upper Travis Peak. Their No. 1 W. M. Dobbins, section 12-19-6w, was selected for this deepening operation. No. 1 Dobbins was completed in January, 1932, as an 18,867,800-foot gas well, total depth 4,368 feet.

Franklin Parish

S. C. Jensen No. 1 Dailey, section 12-11-6e, total depth 2,285 feet, was found barren of oil or gas, and has been plugged.

Richland Parish

North Louisiana's deepest exploratory test was abandoned last week at a total depth of 9,986 feet. Known as the Gulf Refining Co. No. 15 R. R. Rhymes, section 32-17-6e, the test was situated on the flank

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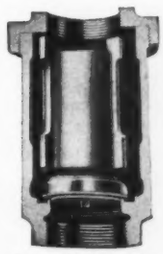

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of the Richland gas field, where the Gulf company holds extensive oil rights. While it is believed by many that this well was bottomed in one of the upper Paleozoic beds, no geological information on the location has been released as yet.

Estimated Daily Production

Estimated daily gross production all companies week ending April 9, 1937:

NORTH LOUISIANA

Bellevue	790
Caddo, light	3,985
Caddo, heavy	2,365
Converse	900
Cotton Valley, heavy	275
Cotton Valley, light	*1,705
DeSoto and Red River	1,385
Elm Grove	370
Haynesville	3,390
Holly	145
Homer	2,665
Lisbon	1,200
Pleasant Hill	125
Rodessa	47,560
Sarepta-Carterville	395
Sligo	460
Urania	2,790
Zwolle	730
Total	71,235

SOUTH ARKANSAS

Champagnolle	1,600
El Dorado	2,010
Lisbon	285
Miller County	560
Nevada	820
Smackover, light	2,115
Smackover, heavy	16,825
Stephens	545
Troy	1,425
Urbana	1,355
Total	27,540

Texas side of Rodessa field—45,580 bbls. daily.

*1,195 bbls. of Cotton Valley light is distillate.

Tensas Parish

After having been temporarily abandoned at a depth of 798 feet for about 10 months, H. M. Jones and others No. 1 Chicago Mill & Lumber Co., section 30-12n-10e, blew out and indicated a potential of 30,000,000 feet of gas with about 10,000 bbls. salt water, and considerable sand. After blowing for 12 hours the well bridged. Operation is now standing for orders, but it is expected that tools will be moved in for further testing. A 34,000-acre block is held here by Jones and associates.

Red River Parish

Gulf Refining Co. No. 39 E. T. Robinson, NW section 25-13-11, was a routine completion in the Bull Bayou field, pumping 43 bbls. daily on initial test, total depth 2,550 feet.

Cotton Valley—Webster Parish

A state hearing is expected soon in anticipation of an order for the uniformity of operations in the many producing zones of the Cotton Valley field. Present development has as the principal objective the gas and distillate sands at 5,500, 8,100, 8,400, and 8,550 feet. The question of classifying gas and distillate wells as either oil wells or gas wells will be decided. A preliminary meeting of engineers representing operators in the field has been held preparatory to the state conservation department hearing, date of which has not yet been announced.

ARKANSAS

Lafayette County

Carl B. King Drilling Co. No. 1 Woolcott, NE section 36-19-26, situated about 10 miles northeast of the Rodessa production, and drilling to test possibilities at this point from the same producing horizon, has topped the Paluxy at 3,710 feet, and first anhydrite stringer at 5,255 feet, and continues to drill below 5,355 feet.

Nevada County

As a routine completion in the Troy field, Benedum & Trees No. 1 Mary Jackson, NE NW NE section 9-14-20, pumped 150 bbls. oil and 350 bbls. salt water daily from the Tokio sand, total depth 2,134 feet.

In the same field Bruce E. Wallace completed No. 1 William Haynie, SE SE NW section 6-14-20, in the Nacatoch sand, pumping 40 bbls. daily, total depth 1,183 feet.

Hempstead County

Hempstead County's deepest test, Root Petroleum Co. No. 1 Lucey E. Drake, SE SE NW section 24-14-24w, was plugged and abandoned last week at total depth of 4,507 feet, after running Schlumberger survey and finding all porous zones unattractive.

EAST TEXAS (Border Counties)

Harrison County

Oil production in the Tokio sand on the flank of the Waskom gas field of Harrison County has attracted the drilling of several wells to this horizon recently. Four completions were made during the last week, and seven other locations are either rigging up or drilling.

C. M. Baglen No. 2 Trosper at Waskom pumped 16 bbls. per day on initial test from Tokio sand 2,405-2,453 feet. Geyser Oil Co. No. 1 Alex Moore, pumped 14 bbls. per day from the Tokio, total depth 2,452 feet. H. H. Robert No. 1 Douglas, pumped 12 bbls. in 24-hour period, total depth 2,447 feet.

After the third acid treatment the Midfield Oil Co. No. 1 Greet, Baker Survey of Harrison County, near Latex, flowed at the rate of about 7 bbls. hourly for a short time from the Tokio sand, 2,356-2,365 feet. The well has settled down to a 10-bbl. per day pumper.

Panola County

The Motex Oil Co. No. 1 Furrh Estate, Alstone Survey, east of Elysian fields, on their 12,000-acre block, proved disappointing at total depth of 6,175 feet, and has been plugged and abandoned. The Glen Rose formations proved dry, although the Oolitic lime zone from 5,021-34 feet was highly porous. The Pettit lime was topped at 5,675 feet, without yielding production. Total depth at time of abandonment was 6,175 feet.

Shelby County

The Potter & Rubeling No. 1 Polly, William Wisner Survey, which has been temporarily shut down for some time at 4,070 feet, has been plugged and abandoned at this depth.

H. A. Stebbinger and others have cleaned up the fishing job which they encountered while drilling casing plug, and are preparing to test gas and oil showings logged prior to setting casing. Total depth of this well is 5,052 feet.

Shelby Oil Co. has staked location 600 feet south of C. A. Parker No. 1 Windham, English Survey, for a 6,000-foot test. The Windham well has been producing for about one year from a depth of 3,200 feet.

ALABAMA

Choctaw County

Joe Modisett and others No. 1 McCarney, SE SW SW section 20-9n-2w, began drilling recently in time to save leases on surrounding block from expiring, and are now rigging up for deep test after setting surface pipe at 105 feet.

Houston County

Rice Oil & Gas Co. No. 2 Oakley Estate, section 9-3n-29e, which has been shut down at 4,002 feet for several months while arranging for heavier drilling equipment, has now been rigged up for deeper drilling, and is now drilling at 4,988 feet in the Tuscaloosa formation.

FLORIDA

Lake County

Oil Development Co. of Florida No. 2 Gulf Exploration Co., section 17-24s-25e, 65 miles northeast of Tampa, Florida, is now drilling below 6,100 feet in granite, the top of the basement rock having been encountered at 6,050 feet. This marks the first penetration of igneous rocks in Florida, and has added materially to the geology of that territory. The well is situated upon the south flank of the Ocala Uplift, and was staked after mapping a magnetic high having attractive closure.

Valuable Geological Information

Much valuable geological information has been developed through the drilling of Oil Development Co.'s test. Present total depth of the well is 6,200 feet. It was spudded on March 20, 1935, with rotary equipment. Ocala (Jackson) Eocene limestone was encountered at 65 feet (elevation 55 feet) and the well remained in limestone to a depth of 2,434 feet, where the massive Eocene anhydrite was encountered. This formation, with occasional lime breaks, continued for

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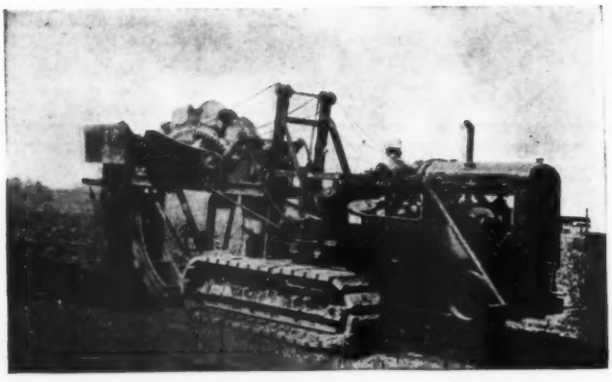

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632 feet or to a depth of 3,066 feet. Immediately below the massive anhydrite, 300 feet of Oolitic limestone was encountered. The top of the Cretaceous (probably Riply) was encountered at 3,443 feet, and the top of the Selma chalk at 3,454 feet. This soft white Selma chalk continued unbroken for 1,200 feet to a depth of 4,654 feet, where the first notable shale breaks commenced to show. The first Glauconitic green sands were encountered at 5,322 feet, marking the top of the Eutaw. The first true noncalcarious sand (probably Arkose) was encountered at 6,050 feet, and immediately below this sand, residual sand and clay red beds, to a depth of 6,102 feet, where flesh red granite was penetrated. This marks the first time the igneous basement floor has ever been penetrated in the Florida peninsula.

This test is located upon a magnetic high on the south flank of the Ocala uplift.

MISSISSIPPI

Copiah County

The California Co. is sponsoring a seismograph crew in Copiah County, centering around Township 10n, Range 7e.

Hinds County

State of Mississippi No. 2 fee, section 25-6n-1e, has been shut down at 5,529 feet, following Schlumberger survey. This important deep test for oil near the center of the Jackson gas field, was coring in a very hard reddish brown material, with some shale, which has all indications of being a nonmarine section of Lower Trinity. The state plans to run 7-inch casing for testing of several porous zones indicated on electrical log, and if none of them prove productive, the well will be completed as a gasser in the Jackson gas field horizon.

The Southern Natural Gas Co. is directing a seismograph crew about 6 miles northeast of Edwards, in Hinds County.

Lamar County

Sun Oil Co. and associates have completed rigging up for the drilling of their No. 2 Talley, NW NE NW of section 33-4n-15w, the third well to be drilled in search of oil on the flank of the recently discovered salt dome.

Pike County

Acadian Production Corp. has built derrick for the drilling of their wildcat test in Pike County, No. 1 Bales, SE NW section 24-7e-2n.

TENNESSEE

Tipton County

The newly formed Tennessee-Arkansas Oil Co. has assembled a 21,000-acre block in Tipton County, Tennessee, situated about 3½ miles northwest of Covington, where they have announced intention of drilling several shallow wells in search of oil or gas.

West Texas Fields

(Continued from Page 227)

bbls.; No. 15 H. E. Brown, 1,174-85 feet, 150 bbls.; No. 3 G. B. Hamilton, 1,145-51 feet, 26 bbls. H. S. Gray and others No. 1 W. P. Ferguson, 670 feet, dry. A. P. Nicholson No. 3 R. O. Prideaux, 645 feet, dry. Guy J. Scholl No. 2 Claude Cowan, 1,102 feet, dry.

Clay County

Metzner & Burns No. 16 T. C. Thornberry, 96-110 feet, 5 bbls.

Cooke County

F. W. Merrick, Inc., No. 35 A. Knabe, 1,617 feet, dry. A. D. Robinson No. 3 J. H. Otto A, 807-12 feet, 10 bbls.

Jack County

Brazos River Gas Co. No. 7 York, 2,920-60 feet, 190 bbls. Cato Oil Co. No. 4 Raley, 2,980-3,000 feet, 400 bbls. C. Newburn No. 1 Powell, 474 feet, dry. Panhandle Refining Co. No. 4 Cooke, 2,940-50 feet, 149 bbls.

Montague County

Sinclair Prairie and others No. 7 C. Holt, 1,660-1,702 feet, 230 bbls.

Wichita County

Continental Oil Co. No. 18 Waggoner C, 1,917 feet, dry. Fresno Oil Co. No. 28 L. F. Ramming, 1,297-1,301 feet, 48 bbls. W. B. Omohundro No. 9 S. P. Gibson A, 1,894-1,915 feet, 100 bbls. Perkins & Cullum No. 23 T. L. Burnett and others, 1,567-75 feet, 20 bbls. Pois & Schulz No. 3 Foster C, 1,267-77 feet, 100 bbls. Rubsam & Hunter No. 20 McClure B, 591 feet, dry. H. L. Rugeley No. 14 Waggoner A, 1,100 feet, dry.

Wilbarger County

Humble Oil & Refining Co. No. 22 W. T. Waggoner H, 2,064-76 feet, 1,000 bbls. Phillips Petroleum Co. No. 2 W. T. Waggoner FF, 2,523-25 feet, 50 bbls. The Texas Co. No. 433 W. T. Waggoner A, 1,964-80 feet, 80 bbls.

Young County

S. S. Alexander No. 1 G. Van Hemert, 751 feet, dry. S. Caprito and others No. 1 J. E. Laquay, 3,602-3,790 feet, 30 bbls. Cox & Parkin No. 1 H. Keng, 1,005 feet, dry. S. R. Hanson No. 1 J. O. Stratton, 525-50 feet, 7 bbls. I. B. Persky No. 5 Haygood, 1,005 feet, dry. E. C. Reed and others No. 1 J. L. Langston, 570 feet, dry.

PANHANDLE COMPLETIONS

Carson County

Magnolia Petroleum Co. No. 22 fee, 2,958-95 feet, shot, 797 bbls. on pump.

Smith and others No. 1 Gorenflo, 2,565-83 feet, 51,799,000 feet of gas.

Gray County

Champlin Oil & Refining Co. No. 1-B Lovett, dry and abandoned 3,578 feet. Sinclair Prairie Oil Co. No. 1 Post, 3,212-74 feet, shot, 277 bbls. on pump. Phillips Petroleum Co. No. 1 McKinney, 3,162-3,257 feet, shot, 523 bbls. on pump.

Hutchinson County

Drilling & Exploration Co. No. 12 Haile, 3,011-77 feet, shot, 433 bbls. on pump. Phillips Petroleum Co. No. 18 Cockrell, 2,990-3,067 feet, shot, 333 bbls. on pump; No. 3 Whittenburg, dry and abandoned 3,026 feet. Shell Petroleum Corp. No. 2 Wisdom, 3,130-84 feet, shot, 526 bbls. on pump.

Phillips Petroleum Co. No. 1 Lucas, 3,095-3,214 feet, shot, 41,110,000 feet of gas; No. 6 Moore-Timms, 3,075-3,152 feet, shot, 128 bbls. on pump. Skelly and Cabot Carbon Co. No. 1 Yake, 2,460-2,817 feet, shot, 28,296,000 feet of gas. Stekoll Oil Producer No. 6-D Whittenburg,

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3,045-80 feet, shot, 222 bbls. on pump; No. 6 Wisdom, 3,030-3,140 feet, plugged back to 3,055 feet, shot, 20 bbls. Timms-Robinson Oil Co. No. 5 Moore, 3,090-3,135 feet, shot, 640 bbls. on pump.

Hansford County

Hobbs and others No. 1 Pearson-Hitch, 2,680-2,864 feet, shot with 380 quarts from 2,675-2,840 feet; 5,173,000 feet of gas; elevation 3,022 feet.

Moore County

Texoma Natural Gas Co. No. 10-P Sneed, 2,375-2,900 feet, plugged back to 2,870 feet; 9,178,000 feet of gas.

Phillips Petroleum Co. No. 1 Booher, 3,040-3,197 feet, 71,270,000 feet of gas. Shamrock Oil & Gas Co. No. 1 Beeker, 2,870-3,484 feet, 138,000,000 feet of gas.

Wheeler County

Burch and others No. 5 Plummer, dry and abandoned at 3,370 feet. Elbar Oil Corp. No. 1 Cullum, 2,451-59 feet, 157 bbls. on pump. Palmer and others No. 1 Holmes, 2,042-2,265 feet; 27,314,000 feet of gas. Phillips Petroleum Co. No. 1 Porter, dry and abandoned, 7,142 feet; elevation 2,405 feet.

Palmer and others No. 1 Pugh, 2,055-2,265 feet, 59,320,000 feet of gas.

CENTRAL TEXAS COMPLETIONS

Coleman County

Midfield Oil Co. No. 1 T. H. Ward, 1,500 feet, dry and abandoned.

Jones County

Fain & McGaha Oil Corp. No. 1 Swenson, one-half mile northwest of Lueders, 2,008 feet, dry and abandoned. T. D. Humphrey No. 17 Dorsey, Hawley pool, 2,219-22 feet, 275 bbls. Ungren & Frazier No. 8 Dorsey, Hawley pool, 2,206-15 feet, 831 bbls. in 18 hours naturally; No. 4-D Dorsey, Hawley pool, 2,214-21 feet, 725 bbls.; No. 1 J. Steele, 3 miles northeast Hawley pool, total depth 2,487 feet, dry and abandoned.

Shackelford County

Albany Oil and Pardue No. 10 Davis, total depth 1,729 feet, dry and abandoned. Baker & Pardue No. 4 Davis B, total depth 1,675 feet, dry and abandoned. Danciger Oil & Refining Co. No. 1 J. E. McCowan, total depth 2,025 feet, dry and abandoned, northwest corner of county. Roeser & Pendleton No. 23 Dawson & Conway, 1,606-18 feet, total depth 1,627 feet, 175 bbls.; No. 1 Newell, total depth 1,973 feet, dry and abandoned.

Stephens County

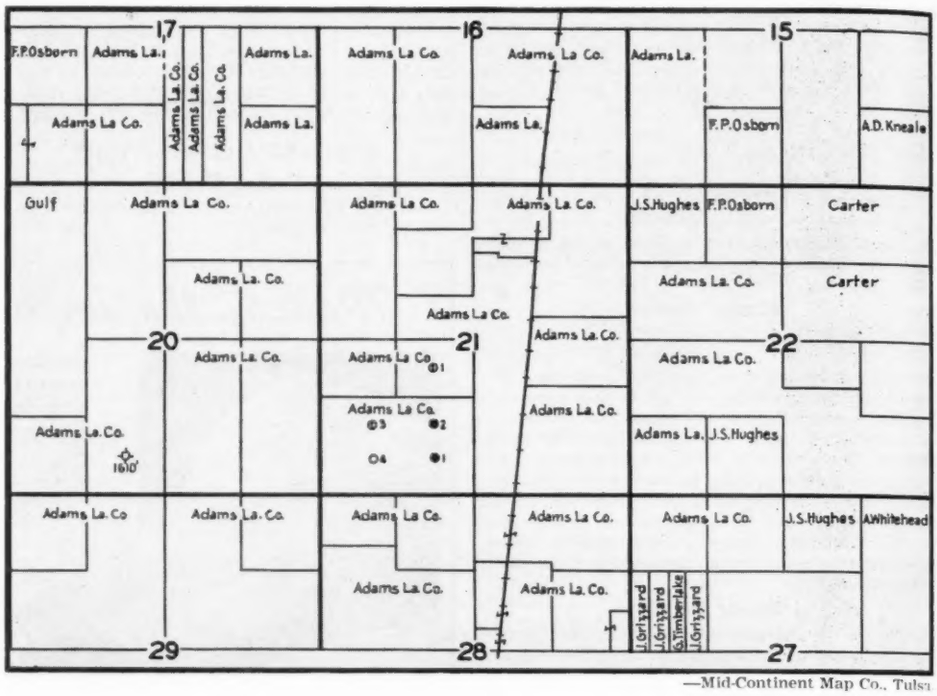
C. B. Christie and others No. 1 Maury, 4 miles west of Crystal Falls, total depth 3,600 feet, dry and abandoned.

Patoka Pool New Producing Area in Illinois

The Patoka pool, recently opened in Marion County, Illinois, has become one of the more active areas in the Illinois Basin.

Only one oil well had been completed, but the second well was producing oil and nearing completion; two wells were drilling and location staked for a third. Development of the pool, which is in Patoka Township, northwestern corner of Marion County, will be conservative because all close-in acreage is owned by Adams-Louisiana Oil Co. Carter Oil Co. and Gulf Oil Corp. have acreage in sections east and west, respectively, of the discovery section.

The discovery well, Adams-Louisiana No. 1 Merryman, SE SE SW section 21-4n-1e, had initial production of from 150 to 175 bbls. daily from Benoist sand of the Chester series at 1,391-1,418 feet, total depth, and now is producing 52 bbls. daily through quarter-inch choke. The company's No. 2 Merryman, 440 feet north of the discovery, is the newest producer, with production estimated at 100 bbls. No. 3 Merryman, 880 feet west of No. 2 Merryman, and No. 1 Freyer, NE SW section 21-4n-1e, are drilling, while No. 4 Merryman, 880 feet west of the discovery, is a location. The map, just prepared by Max H. Roberts and Tom Darland, of the Mid-Continent Map Co., shows much of the 2,000-acre block owned by the Adams-Louisiana company. To the south of the mapped area, Hempen & Burgess have started work at No. 1 Allison, NE NW SW section 33-4n-1e. Messrs. Darland and Roberts reported seeing oil men from Wichita and Independence, Kans.; Tulsa, Oklahoma City, Altus, Shawnee, Ardmore, Pawhuska, Claremore and other Oklahoma towns; San Antonio, Dallas, Fort Worth and Houston, Tex.; Robinson, Ill.; Bradford, Pa.; Marion, Ind.; Shreveport, La.; Owensboro, Ky., and many other oil centers in the courthouse at Salem and in the hotels of that city and Centralia. Some 12 acreage blocks have been assembled in Marion County, alone, and blocks are being assembled in 50 counties in the basin area.



—Mid-Continent Map Co., Tulsa

Mepham Corp. Acquires Rights

Geo. S. Mepham Corp., East St. Louis, Ill., has purchased exclusive rights under the Feldenheimer U. S. patent No. 1,438,588 for the use of sodium hexametaphosphate and other pyrogenic derivatives of orthophosphoric acid to control the deflocculation of clays in oil-well drilling-muds. The addition of a small amount of sodium hexametaphosphate to a drilling-mud which has become too viscous will quickly reduce the viscosity of the mud and bring it readily under control. The use of the process of the Feldenheimer patent for deflocculating clays for ceramic and oil-well drilling purposes extends back for several years and the patent has received wide recognition for the production of deflocculated clays for ceramic purposes.

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Texas and Louisiana Gulf

FIND DISTILLATE PRODUCER IN JEFFERSON DAVIS PARISH

By
F. L. SINGLETON

HOUSTON, Tex., April 12.—South Roanoke field, Jefferson Davis Parish, Coastal Louisiana, was proven for distillate production by completion of Shell Petroleum Corp. No. 1 Joe Sturdivant flowing an estimated 3,000,000 feet of gas per day and 2½ bbls. of distillate per hour through a 16/64-inch choke with tubing pressure 3,000 pounds and casing pressure 2,700 pounds. Production was obtained by perforating the casing at 8,540-50 feet.

The well is in the NE quarter of section 25-10s-4w, about 4 miles southwest of the South Jennings field that was opened as a wet gas area the past year by the Stanolind Oil & Gas Co. It is the general opinion that these two fields are situated on the same structure with the Stanolind test located on the north end and the above well on the south end. Both wells were drilled below 9,000 feet and were plugged back and completed in the 8,000-foot horizons due to mechanical trouble caused by excessive gas pressures below 9,000 feet.

Stanolind Oil & Gas Co. is scheduled to move in material to the South Jennings field for No. 2-A Calcasieu National Bank, about three-quarters of a mile north of the discovery well in section 10-10s-3w, and Shell Petroleum Corp. is expected to announce location for its second test at South Roanoke within the next few weeks.

In the northern part of the parish and located on the China or South Elton Prospect, Stanolind Oil & Gas Co. and Amerada Petroleum Corp. have staked No. 2 Calcasieu National Bank, 990 feet north and 660 feet west of the SE cor. NW section 28-7s-3w, about a half mile west and slightly north of the same companies' No. 1 Calcasieu National Bank, recently abandoned after it blew out from a total depth of 9,139 feet. This test encountered numerous oil and gas showings above that depth and practically assures the district of another producing field.

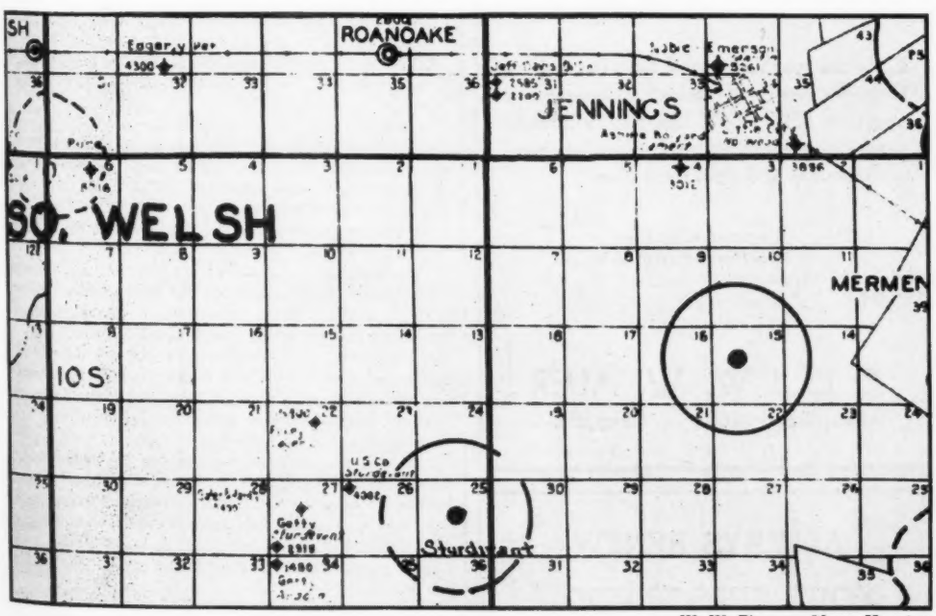
Another Gulf Location

The Gulf of Mexico received its second location as preparations were being made by the Superior Oil Producing Co. and the Pure Oil Co. for a joint test to be drilled offshore about a mile from Cameron Parish. The well will be carried as No. 1 State Maritime Belt, No. 1 Gulf of Mexico and has been tentatively located from a point on the shoreline at the intersection with the common line between sections 4 and 5 in Township 15s-8w, to a point 1 mile south in the Gulf. The area has been worked extensively with geophysical instruments and the location follows the purchase of a lease on the maritime belt from the Southern Sulphur Corp. for a consideration reported at $50,000.

The fifth producer for the west flank of the old Jennings field, Acadia Parish, was added by the completion of A. C. Glassell and others No. 1 J. Trusel, which is cleaning itself through a 14/64-inch choke showing 1,300 pounds on the tubing and 250 pounds on the casing. The well is producing from 185 feet of oil sand bottomed at 7,020 feet and is located in section 42-9s-2w. The first test to encounter the salt in the present active drilling campaign is Superior Oil Producing Co. No. 2 Leckelt. The salt was topped at 7,600 feet and it is drilling in salt below 7,887 feet. On the southwest flank, Shell Petroleum Corp. No. 2 Community is running 2½-inch tubing after showing distillate at a plugged back depth of 7,360 feet.

New Producing Sand

The Valentine field, Lafourche Parish, received its second producing sand and production tests are scheduled to be made in two more wells that have indicated additional production possibilities. Pan American Production Co. No. 2-A Harang flowed 625 bbls. of 32 gravity oil per day through a five-thirty-seconds inch choke from sand at 5,364-90 feet. Same company's No. 4 Harang showed 1,150 feet of pipe line oil on a five-minute drill stem test at 5,414-32 feet and a production test was being made. No. 3 Harang located southwest of the discovery well was being tested in a deeper sand at 7,499-7,522 feet. The discovery well was completed in sand from 6,900-7,000 feet.



—W. W. Zingery, Maps, Houston.

Broken circle indicates new distillate field opened in Jefferson Davis Parish, Coastal Louisiana, by Shell Petroleum Corp. No. 1 Sturdivant. Complete circle to the northeast is South Jennings field, another distillate area opened the past year by Stanolind Oil & Gas Co.

Texas Co. No. 37 State, in the Lake Barre field, Terrebonne Parish, is cutting and pulling stuck drill stem which was shot at 8,118 feet, after it became stuck at a total depth of 10,959 feet. The well is located on the flank of the field and is the first deep test drilled.

On the North Starks Prospect, Calcasieu Parish, D. D. Oil Co. No. 1 Lutcher-Moore is being cored ahead after the operators recovered the drill stem which became stuck several weeks ago when the well attempted to blow out at a depth of 8,398 feet. Location is in section 1-8s-13w.

Jefferson Lake Oil Co. No. 414 State located on the Jefferson Island dome, Iberia Parish, which has shown indications of opening the first production for this old salt dome, was plugged back to 6,940½ feet and flowed an estimated 50 bbls. of net oil and an unestimated amount of salt water. It was jetted with gas and is now shut down.

In the Cankton field, St. Landry Parish, Superior Oil Producing Co. No. 1 Brasseaux is coring in sand at 8,584 feet and is said to be checking over 100 feet higher than the company's No. 1 Savoie, the discovery well. Location is in section 24-9s-2w. On the Bristol Prospect, Shell Petroleum Corp. No. 1 Boagni is drilling in sand below 7,318 feet with no shows reported.

Texas Co. No. 1 Horseshoe Bayou, Wax Lake Prospect, St. Mary Parish, coring below 11,235 feet, is the fourth test in Coastal Louisiana to be drilled below the 11,000-foot horizon. This well has attracted much attention due to an electrical logging device which showed 30 ohms resistivity in sand bottomed at 10,975 feet at which point a string of 7-inch casing was cemented several weeks ago.

Texas Coast

The discovery of a new field in southeastern Jackson County and the completion of a mile north extension to the Heyser field in Calhoun County, together with the showing of a wildcat at the Aldine area in Harris County were the featured developments along the Texas Coast the past week.

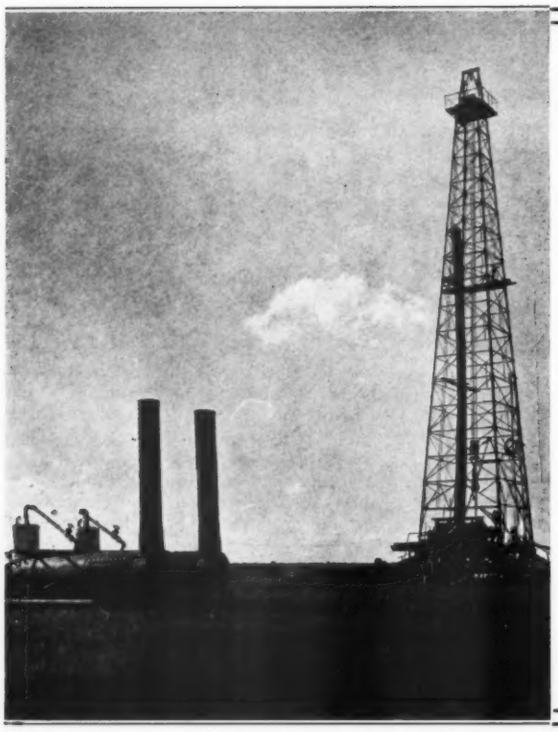
Texas Co. No. 1 T. N. Mauritz, located on the Ganado structure, southeastern Jackson County, is flowing an estimated 75 bbls. of fluid per day through a three-sixteenths inch choke with tubing pressure 1,475 pounds and casing pressure 1,275 pounds. It was washed in Friday night from a screen setting made in sand from 5,080-5,111 feet, the total depth. Due to the size of the choke, it will be several hours before the well cleans itself. It is located on a block of about 5,000 acres in the Morris and Cummings Survey.

Production in the Heyser field, northwestern Calhoun County, was extended into Victoria County by the completion of George Echols No. 3 Bennett. The hole is bottomed in the regular producing horizon of the field at 5,476 feet and on a potential test through perforations at 5,467-70 feet, it flowed 8½ bbls. of 33 gravity oil per hour through a three-sixteenths inch choke with tubing pressure 1,117 pounds and casing pressure 1,500 pounds. Location is being made for a second test and offsets will probably be started by the Gulf Oil Corp., Magnolia Petroleum Co. and the Sinclair Prairie Oil Co.

In the Keeran field, Victoria County, Union Oil Co. of California No. 3 J. M. Keeran perforated casing at 5,953-58 feet and is flowing 5 bbls. of 38 gravity oil per hour through a 9/64-inch choke with tubing pressure 880 pounds and casing pressure 1,820 pounds. The well is in the M. DeLeon Survey, about 2,500 feet southeast of No. 2 Keeran, a gas well, and approximately a mile from the nearest oil well.

Aldine Area

Further development in the Aldine area, Harris County, has been assured by the showing of Texas Gulf Producing Co. No. 1 Gillespie and Garnsey located



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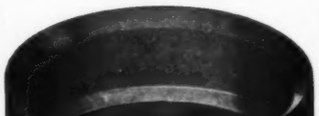

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in the Simon Contreas Survey, which is shut down after swabbing dry through perforations at 7,097-1,100 feet. After running the swab three times, the well began to clean itself by heads showing some 30 gravity oil with the pressure building up to 1,250 pounds. However, the well soon died and after swabbing several days it began to show brackish water, and is now shut down. It is reported that the casing will be reperforated. Several wells have been drilled on this prospect and some have encountered favorable showings, but none have produced commercially. H. M. Harrell and others No. 1 F. N. Bullock in the Charles Bowman Survey is drilling in shale below 5,382 feet and is expected to start coring for the Cockfield section within the next day or so.

In the Diadem area of the Dickinson field, Galveston County, Atlantic Refining Co. No. 1 G. O. Anderson is flowing 23 bbls. of pipe line oil per hour through a quarter-inch choke with working pressure on the tubing 850 pounds and casing pressure 1,200 pounds. Production is from perforations at 8,071-75 feet. In the same area and located in the F. P. Epperson Survey, Diadem Oil Corp. No. 2 Way topped salt water at 8,190 feet and cored to 8,198 feet, the total depth, and a string of 6⅝-inch casing was cemented at 8,191 feet. Broken sand and shale showing oil was cored at 8,135-48 feet at which point the casing is to be perforated. This test is north of production and establishes the water level for the area northwest of the field proper.

Humble Oil & Refining Co. No. 1 Kirby Lumber Co., half a mile east of production in the Segno field, Polk County, is plugging back to 5,197 feet after flowing an estimated 8 bbls. of fluid per hour of which 85 per cent was salt water. The Cockfield sand was topped at 5,122 feet and sand showing oil was cored from 5,193-5,202 feet, the total depth. Derrick is being built for La-Quinta Oil Co. No. 1 Wing Estate located on a 68.2-acre tract in the I.&G.N. Survey No. 15.

In the Blue Basin area, southern Wharton County, Texas Co. No. 1 Kluck in the Joseph Hyland Survey is running 5-inch casing to 4,718 feet, the total depth, after a five-minute drill stem test at 5,638-54 feet showed 500 pounds of pressure and 10 feet of drilling mud with no showing of oil or salt water. Sand was cored at 4,620-4,718 feet. This well is located southwest of three deep tests drilled by the Pure Oil Co.

Shell Petroleum Corp. No. 1-B Mauritz, southeast of the discovery well in the Mauritz field, Jackson County, was completed through perforated casing at 5,645-47 feet, and is flowing 90 bbls. of oil and an estimated 40 bbls. of salt water per day through a 9/64-inch choke with tubing pressure 450 pounds and casing pressure 400 pounds. It will probably be killed and recompleted.

In the Silsbee field, Hardin County, Republic Production Co.-Houston Oil Co. No. 10 Brooks tested 780 feet of pipe line oil on a drill stem test at 6,954-65 feet and it is being completed after cementing 7-inch casing at 6,953 feet. Same companies' No. 11 Brooks was drilled to a total depth of 6,964 feet and has plugged back to 6,953 feet after showing oil and salt water on a drill stem test at 6,944-64 feet. Locations have been made for Nos. 12 and 13 Brooks fee. On the northwest flank of the Batson dome, Bunte Oil & Gas Co. is moving in a rig for No. 1 Melhome located in the J. Melhome Survey.

Gulf Oil Corp. No. 1 Carrie Baker, a south offset to No. 2 Wilkes and Smith, Lockridge field, Brazoria County, flowed 615 bbls. per day through a quarter-inch choke through perforations at 6,355-68 feet, the total depth. Locations were made by the Gulf Oil Corp. and Shell Petroleum Corp. for No. 2 Gibson and No. 3 Ramsey Prison Farm.

The Katy area, Waller County, which was proven for a wet gas field in 1935 by the completion of Stanolind Oil & Gas Co. and others No. 1 Thorp, received its second location when Stanolind Oil & Gas Co. staked No. 1 William Hargrave three-quarters of a mile southeast of the Thorpe well in section 110 of the T. S. Reese Survey. The Thorpe was the first production to be developed from the Upper Saline Bayou formation and was completed at a plugged back depth of 7,475 feet.

Five miles southeast of Crosby in the Cedar Bayou area, Harris County, H. J. DeArman and others rigged up No. 1 Tyrell-Garth, northeast corner of the L. Hemmingway Survey. In San Jacinto County, location for a Cockfield test has been made in the William West Survey by the Cockburn Oil Co. and others No. 1 Whitten Estate.

C. B. Bunte and others are moving in a rig to the Sandy Point field, Brazoria County, for No. 1 Fite, a north offset to the discovery well, completed the latter part of last year in the Marginulina sand at 6,489-6,501 feet.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Apr. 10.—In the West-Central Turner Valley area, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, bottoming in the Madison limestone at 6,911 feet, has completed production test with small showings of oil and gas. It will be acidized or shot in the hope of making a small commercial producer. Location was 5¼ miles north and 1½ miles west of Turner Valley Royalties No. 1.

In section 5-19-2w5, Mercury Royalties No. 1, LSD 8, is cementing 13⅜-inch casing below 2,800 feet and will change from cable to rotary tools to complete the well. Mercury Oils No. 8, LSD 3, section 4-19-2w5, is running 15-inch casing to about 2,400 feet.

In section 32-18-2w5, Royal Crest Petroleums No. 1, LSD 9, a half mile northwest of the No. 4 Sterling Pacific producer, has spudded. Rosemount Oils, Ltd., will drill No. 1 in LSD 11, same section. West Flank Oil Co. will drill two tests in LSD's 1 and 8 on acreage of the Canadian Oil Development Syndicate.

Richland No. 2, LSD 5, section 28-18-2w5, is cleaning out and carrying casing around 3,000 feet. Richland No. 3, LSD 14, is in hard formation around 5,000 feet after getting a strong show of crude at 4,950 feet. It is expected to get the lime this month at 5,700 feet.

In section 21-18-2w5, West Side Royalties No. 1, LSD 3, is making about 210 bbls. of crude per day. Newfold Royalties No. 1, LSD 11, same section, finished in the lime at 6,254 feet with a very small naphtha production, is being treated with acid. Davies Petroleums No. 2, LSD 13, same section, is rigging rotary equipment from No. 4 Sterling Pacific and will spud in a few days with Royalite Oil Co. handling the drilling.

In section 20-18-2w5, Monarch Royalties No. 1, LSD 9, is below 2,910 feet after cementing 10¾-inch casing at 2,527 feet. Brown Oil Corp. No. 2, LSD 8, same section, is below 320 feet.

Sunset Oils No. 1, LSD 10, sponsored jointly by Alberta Pacific Consolidated Oils, Ltd., and McDougall-Segur Exploration Co., is spudding.

Southwest Extension

In the southwest extension of Turner Valley, Prairie Royalties No. 1, LSD 16, section 17-18-2w5, is below 1,518 feet. Brown Oil Corp. No. 1, LSD 14, section 16-18-2w5, is below 355 feet. Firestone Petroleums No. 1, LSD 13, same section, has spudded. Richwell Oil Co. No. 1, LSD 5, has derrick up and is hauling equipment.

In section 9-18-2w5, National Petroleum Corp. No. 2, LSD 4, has spudded. This is the farthest south active test in the field.

North Turner Valley

On the west flank of North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is resuming from 2,370 feet after running 13-inch casing.

Okalta Test Located

Okalta Royalties No. 1, sponsored by Okalta Oils, Ltd., has been located in LSD 5, section 30-18-2w5. Location is about 2 miles west and a half mile south of Turner Valley Royalties No. 1. Drilling will start in the Lower Belly River or Upper Benton formation, and the test is expected to get the lime somewhat higher than most of the wells in the crude area. It will help to determine the potentialities of a large area west of the field where the Okalta company holds extensive acreage.

High River-Aldersyde

In the High River area east of Turner Valley, Arca Development Corp. No. 1, NW section 24-18-1w5, is redrilling at 8,772 feet after cementing back.

On the Aldersyde structure, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, is in very hard formation below 7,085 feet.

On the New Valley structure, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, is below 7,260 feet.

East Central Alberta

Northeast of Wainwright, in East Central Alberta, S. W. S. Drilling Co. of Edmonton is assembling equipment for No. 1 test of Battleview Oils, Ltd., in NW section 32-47-5w4. This will be the first deep test on the Battleview structure.

In the Wainwright field, Montreal-Alberta Oil Co. No. 1, LSD 2, section 15-45-7w4, bottoming in the lime at 3,390 feet with a strong show of green crude, will deepen for a thorough test of that formation.

Tests in the Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is below 7,223 feet with increased lime indications.

On the Kootenay dome west of Calgary, Roxana Petroleum No. 1, section 8-24-7w5, is below 2,298 feet and more than 1,358 feet in the Madison limestone and preparing to test rock pressure. It is believed close to the Banff shale contact.

On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, is below 4,985 feet after cementing off shale break in the brown sand.

On the Highwood-Sinclair structure, south and west of Turner Valley, Southend Petroleums, Ltd., will deepen the old Imperial-Highwood well in LSD 6, section 36-18-3w5. In 1930 drilling was suspended on this test by Imperial Oil, Ltd., after a fault was encountered at 4,441 feet, where the Fernie shale formation recurred after getting the Madison lime at 4,223 feet. The 4½-inch was set at 4,226 feet and an oil show met in the lime at 4,311 feet. Southend Petroleums, Ltd., hope to get a recurrence of the lime at fairly shallow depth, but heavy duty rotary equipment will be used capable of drilling to 9,000 feet. Location is about 2½ miles west and a little north of Turner Valley Royalties No. 1, and immediately northwest of Okalta Royalties No. 1 location.

On the Mill City structure west of Pincher Creek, Weymarn Petroleums No. 2, LSD 5, section 7-6-1w5, is waiting for production test.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum No. 1, LSD 14, section 29-9-17w4, is taking production from the stray sand at 3,816 feet. There is considerable water with the crude. Plains Petroleum No. 2 will be spudded this month about a half mile south of No. 1.

On the South Twin River structure, Del Bonita Associated Oils No. 3, LSD 9, section 10-2-20w4, is standing cemented in the top of the lime at 3,988 feet with good shows of gas and light crude, and will drill in late this month.

In the Lethbridge area, Dr. T. B. Williams of Calgary has spotted a test for Lethbridge Petroleum & Refining Co. west of the city. Drilling will be handled by Empire Drilling Co. of Calgary.

In the Chin Coulee area, Lethalta Oils, Ltd., has arranged to deepen its unfinished No. 1 test in LSD 5, section 33-8-18w4, from 2,300 to 3,300 feet, to test the oil sand encountered by Plains Petroleum No. 1 in the Taber area.

British Columbia

In southeastern British Columbia, Columbia Oils, Ltd., of Vancouver is preparing to deepen its No. 1 test in the Sage Creek district from 5,808 feet.

Central West Fields

(Continued from Page 205)

bur Swingle & Co. are rigged up for No. 3 Ernest Eppley.

In Knox County, section 10, Pike Township, C. O. Moore No. 2 L. H. Colgin drilled sand at 675-85 feet without a show of oil or gas and has been abandoned. In section 10, Jackson Township, Preston Oil Co. staked location on the Loyd Bailey property.

John Bindas No. 1 O. C. and R. W. McMunn, in section 23, Center Township, Guernsey County, was dry and aban-

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$ .80	$ .79	$ .74	$ .78	$ .79	$ .80	$ .76	....	....	....	$ .80	$ .76	$ .76	$ .77	$ .78	....	....	$ .70	$ .70	$ .70	....	....	$ .70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$ .70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$ .70	.74	.74	.71	$ .70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$ .78	.73	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$ .84	$ .79	....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

doned at 1,355 feet. In section 10, Liberty Township, Joe Flannery & Co. are spudding No. 3 B. C. McKahn and are rigged up on the Frank Carver property, in section 12, same township. In section 11, Wilbur Keith & Co. are rigged up on the Lafayette Milligan property.

In section 32, Wayne Township, Belmont County, Barnesville Development Co. No. 1 Howard Brown drilled Keener sand at 1,385-1,400 feet and gauged 25,000 feet of gas. The well will probably be abandoned.

John Yerian No. 11 Albert Mallet Heirs, in section 24, Jefferson Township, Noble County, made a small show of oil at 945 feet in the Maxon sand at 930-70 feet but has been plugged.

In section 21, Grandview Township, Washington County, Hall & Henning Co. No. 5 A. & C. Algeo made 2 bbls. of oil naturally in the Keener sand at 1,570-87 feet, and is being cleaned out after a shot.

In Meigs County, section 1, Rutland Township, Marshall & Reed are spudding in the second test on the Mary Cook property. In section 2, same township, Ohio Fuel & Gas Co. No. 1 Jasper Edwards was completed in the second Berea sand at 1,530-38 feet and made a small showing of gas. It has been plugged and abandoned. In section 3, H. M. Nelson is rigged up for a test on the Lemoine Hysell farm. In section 32, Salisbury Township, Smith Oil Co. is rigged up for a test on the George Renshaw property. In section 18, Lebanon Township, Vienna Drilling Co. is rigged up for a test on the Alice Williams property, and in section 31, same township, Roy Holmes & Co. is rigged up for No. 3 on the Schuyler Bush farm.

California Fields

(Continued from Page 202)

969 bbls. of clean 37.9 gravity oil and 400,000 feet of natural gas per day from 8,500 feet.

Los Angeles Basin

In the Long Beach field, Winslow Oil Co. completed No. 6 Signal pumping 71 bbls. of 21.9 gravity oil per day from 3,640 feet. The Winslow Oil Co. No. 1 Long Beach was good for 25 bbls. of 22.8 gravity oil per day from 4,525 feet. In the Torrance field P. W. Willett No. 1 Redondo started at 320 bbls. of 15.7 gravity oil on the beam from 3,590 feet. Union Oil Co. No. 100 Bell, a deep test in the Santa Fe Springs field, has been hung up with mechanical trouble at 10,789 feet. This well has not yet found a new deep zone of importance although some showings may prove productive. The company will test these showings on the way out of the hole if no lower productive zone is found.

In the Dominguez field the Union is coring ahead in No. 50 Callender, another deep test, at 10,150 feet in search of a new lower productive horizon. Shell Oil Co. is also working on a deep test but this well is not yet deep enough to prove interesting from a discovery standpoint.

Santa Maria

In the Santa Maria field Union Oil Co. completed No. 17 Squires pumping 131 bbls. of 22.9 gravity oil per day from 3,817 feet. Gunnar Ericksson suspended drilling operations on his No. 1 Dart in section 16-10-34 and will perhaps file an abandonment notice shortly as this outpost was bottomed in the basement which in this instance was Franciscan rocks. Drilling operations were suspended at 3,228 feet which is 38 feet below the top of the basement. In the Gato Ridge field Petrol Co. has completed No. 3 Tognazzini at 2,726 feet but the well has not yet been put on a production test. Barnsdall Oil Co. has also completed a new well in this field but the pumping unit had not yet been delivered and the production test was accordingly put off until next week.

In the Fruitvale field of Kern County L. J. Banducci completed No. 2 Ticehurst, pumping 118 bbls. of relatively clean 21.8 gravity oil per day from 3,392 feet. Tide Water Associated Oil Co. completed No. 12-A-3 Williamson in the Lost Hills field and should have No. 9-A-3 ready for a pumping test within another week. The company's new producer was brought in pumping 71 bbls. of 14.4 gravity oil per day from 1,779 feet. The crew was moved to No. 4-M-3. The Texas Co. should have No. 2 Theta on production within another 10 days as the top of the second zone was logged at 1,024 feet.

Drilling Contractors

(Continued from Page 209)

the Normandie Oil Co., two by Humble Oil & Refining Co. and one by Peyton Brothers, who have derrick up in the West Beaumont area for No. 1 Pansy Yount. Shell Petroleum Corp. has derrick up for No. 1 Texas Public Service Co.; Republic Production Co. and Houston Oil Co. are starting two wells in the Silsbee field; Gulf Oil Corp. and LaQuinta Oil Co. are starting two wells in the Segno field; Humble Oil & Refining Co. and Stanolind Oil & Gas Co. made location for three wells at Hastings; Shell Petroleum Corp. is moving in for No. 3 Ramsey Prison Farm; Humble Oil & Refining Co. and Portilla Oil Co. are starting three tests at Heyser; Texas Gulf Producing Co. has spudded No. 16 Blakely at Blue Ridge; Atlantic Refining Co. and Pure Oil Co. are moving rigs to new locations in the Dickinson field; Humble Oil & Refining Co. is rigging up at Tomball for two wells, while at Fairbanks, Amerada and Stanolind Oil & Gas Co. have made location for No. 1 W. Jacobs. The balance of the new work was started in Pierce Junction, South Houston, Hull, Shepherds Mott, Van Vleck, Palacios, Livingston, Placedo, Katy, Clay Creek and Sour Lake fields.

CALIFORNIA FIELD OPERATIONS, JANUARY, 1937

Seventy-seven wells were completed during the month with an initial daily production of 43,597 bbls., compared with 61 wells completed during December with an initial production of 38,167 bbls.

CALIFORNIA OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells—Drillers	Abd. wells—Producers
Group No. 1—							
Belridge—North	1	3	2	14,340	41	...	...
Belridge—South	...	...	...	.....	157	...	...
Coalinga	2	4	1	12	864	...	...
Edison	...	2	...	.....	87	1	...
Elk Hills	...	...	...	.....	151	...	...
Fruitvale	4	7	3	840	131	1	1
Greeley	6	3	...	.....	1	...	...
Kern River	15	12	12	1,793	1,313	1	...
Kettleman Middle dome	...	1	...	.....	3	...	...
Kettleman North dome	2	12	5	5,400	137	1	...
Lost Hills	...	1	1	288	271	...	...
McKittrick	...	2	...	.....	127	...	...
Midway-Sunset	17	22	11	1,929	2,339	...	2
Mountain View	7	8	4	2,432	174	1	2
Mount Poso	4	7	2	155	237	2	...
Round Mountain	1	1	4	1,284	118	...	...
Ten Section	1	5	...	.....	2	...	...
Wheeler Ridge	...	...	...	.....	26	...	...
Group No. 2—							
Capitan	...	...	...	.....	29	1	...
Elwood	...	1	...	.....	78	...	1
Rincon	1	...	1	690	31	...	...
San Miguelito	1	2	...	.....	10	...	...
Santa Barbara	...	...	...	.....	53	...	2
Santa Maria	4	8	4	7,924	200	2	...
Summerland	...	...	...	.....	19	...	...
Ventura Avenue	2	5	2	683	248	...	1
Ventura-Newhall	4	13	1	100	569	3	1
Watsonville	...	...	...	.....	7	...	...
Group No. 3—							
Brea-Olinda	...	...	...	.....	364	...	...
Coyote—East	1	3	1	60	75	1	...
Coyote—West	1	1	...	.....	43	...	1
Dominguez	...	6	1	240	136	...	...
El Segundo	4	12	...	.....	4	...	...
Huntington Beach	7	8	11	2,194	534	...	1
Inglewood	1	...	...	.....	200	...	...
Lawndale	...	...	...	.....	6	...	...
Long Beach	1	2	...	.....	1,244	8	5
Los Angeles-Salt Lake	...	...	...	.....	122	...	...
Montebello	2	4	...	.....	199	...	...
Newport	...	1	...	.....	.....	...	1
Playa Del Rey	...	1	1	741	210	...	1
Potrero	...	...	...	.....	10	...	...
Richfield	4	5	3	599	265	...	...
Rosecrans	...	...	...	.....	77	...	...
Santa Fe Springs	...	2	1	10	632	...	7
Seal Beach	...	...	...	.....	105	...	1
Torrance	3	4	1	140	523	...	...
Whittier	...	...	...	.....	158	...	...
Wilmington	21	8	3	1,743	14	...	...
Miscellaneous drilling	5	53	...	.....	.....	6	...
Group No. 4—gas fields—							
Buena Vista Lake	...	...	...	.....	4	...	...
Buttonwillow	...	...	...	.....	27	...	...
Chowchilla	...	...	...	.....	.....	...	...
Delano	...	...	...	.....	.....	...	...
Dudley Ridge	...	...	...	.....	.....	...	...
Goleta	...	...	...	.....	3	...	...
McDonald Island	...	1	...	.....	.....	...	...
Rio Vista	2	1	2	Gas	.....	...	...
Semi-Tropic	...	...	...	.....	.....	...	...
Tracy	...	...	...	.....	6	...	...
Total January	124	231	77	43,597	12,384	28	27
Total December	75	227	61	38,167	12,230	25	23
Increase	49	4	16	5,430	154	3	4
Average for year 1936	91	234	67	31,167	12,191	27	17
Average for year 1935	86	243	64	35,082	12,136	29	17
Average for year 1934	53	196	38	47,558	11,053	21	17

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McCORD RADIATOR & MFG. CO.
DETROIT

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 1-20 Capitan, Santa Barbara Co.	32- 5-30	2,717	O.S. drlg.
Ericksson, G., No. 1 Santa Maria, Santa Barbara Co.	16-10-34	3,228	basement
Union Oil Co., No. 2-V Santa Maria, Santa Barbara Co.	30-10-33	2,820	sd. sh. drlg.
Union Oil Co., No. 1-0 Santa Maria, Santa Barbara Co.	21-10-34	3,630	sd. sh. drlg.
Union Oil Co., No. 12 Orcutt, Santa Barbara Co.	26- 9-34	4,037	O.S. drlg.
Union Oil Co., No. 17 Orcutt, Santa Barbara Co.	26- 9-34	3,818	pump. 140 b.d.
Union Oil Co., No. 18 Orcutt, Santa Barbara Co.	26- 9-34	2,864	sd. sh. drlg.
Valley Oil Co., No. 1 Casmalia, Santa Barbara Co.	20- 9-34	1,673	sd. sh. drlg.
Moyle, B. A., No. 1 Gato Ridge, Santa Barbara Co.	4- 8-32	2,625	br. sh. drlg.
Barnsdall Oil Co., No. 6 Gato Ridge, Santa Barbara	9- 8-32	2,515	rig. to pump
Barnsdall Oil Co., No. 8 Gato Ridge, Santa Barbara	9- 8-32	1,750	sd. sh. drlg.
Stewart-Carter Oil Co., No. 1 Gato Ridge, S. Barbara	4- 8-32	2,311	cmtd. 2,160
Petrol Corp., No. 3-A Gato Ridge, Santa Barbara Co.	9- 8-32	2,726	sd. sh. drlg.
Nine Springs Oil Co., No. 1 Los Olivos, Santa Barbara	9- 7-30	3,321	idle
Fisher, Dan, No. 1 Cuyama, Santa Barbara Co.	28-11-28	646	sd. sh. drlg.
Calumet Oil Co., No. 16 Shiells, Ventura Co.	3- 3-19	4,466	P.B. 3,310
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,580	br. sh. drlg.
Ivers, H. A., No. 14 Star, Sespe, Ventura Co.	1- 4-20	302	sd. sh. drlg.
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	918	will cmt.
Speik Oil Co., No. 2 Sespe, Ventura Co.	33- 5-19	2,110	hd. sh. drlg.
Colima Oil Co., No. 2 Sespe, Ventura Co.	25- 5-19	2,110	sd. sh. drlg.
Bolsa Chica Oil Co., No. 5 Temescal, Ventura Co.	5- 4-18	1,685	sd. sh. drlg.
Pacific Western Oil Co., No. 10 Temescal, Ventura Co.	3- 4-18	2,450	sd. sh. drlg.
St. Louis Oil Co., No. 3 Ojai, Ventura Co.	13- 4-23	961	rd. sd. drlg.
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	5,800	hd. sd. drlg.
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co.	23- 3-24	6,465	redrlg. 2,990
C. C. M. Oil Co., No. 5-A Padre Canyon, Ventura Co.	15- 3-24	3,872	br. sh. drlg.
Continental Oil Co., No. 3 Padre Canyon, Ventura Co.	15- 3-24	3,050	hd. sh. drlg.
Honolulu Oil Corp., No. 1 South Mountain, Ventura	23- 3-21	6,744	wet; abd.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	4,077	test. W.S.O.
Associated Oil Co., No. 29 Lloyd, Ventura, Ventura	27- 3-23	5,320	sd. sh. drlg.
Associated Oil Co., No. 60 Lloyd, Ventura, Ventura	27- 3-23	3,098	sd. sh. drlg.
Associated Oil Co., No. 64 Lloyd, Ventura, Ventura	27- 3-23	5,333	cmtd. 5,333
Associated Oil Co., No. 66 Lloyd, Ventura, Ventura	27- 3-23	4,843	sd. sh. drlg.
Associated Oil Co., No. 137 Lloyd, Ventura, Ventura	27- 3-23	5,551	sd. sh. drlg.
General Pet. Corp., No. 17 Barnard, Ventura, Ventura	23- 3-23	6,890	sd. sh. drlg.
Continental Oil Co., No. 6 San Miguelito, Ventura Co.	24- 3-24	6,800	flow, 1,250 b.d.
C. C. M. Oil Co., No. 13-B Rincon, Ventura Co.	8- 3-24	4,100	will cmt.
General Pet. Corp., No. 3-A Rincon, Ventura Co.	8- 3-24	4,512	rig. to pump
Lube Oil Co., No. 1 Devils Den, Kern Co.	2-25-18	4,285	P.B. 3,868
Den Pet. Co., No. 1 Devils Den, Kern Co.	20-25-19	3,650	sd. sh. drlg.
Texas Co., No. 2 Theta, Lost Hills, Kern Co.	11-26-20	1,147	sd. sh. drlg.
Tide Water A. O. Co., No. 9-A-3 Lost Hills, Kern Co.	11-26-20	1,226	sd. sh. drlg.
Tide Water A. O. Co., No. 12-A-3 Lost Hills, Kern Co.	11-26-20	1,779	pump. 50 b.d.
Welport Oil Co., No. 18 McKittrick, Kern Co.	26-29-21	1,040	test. W.S.O.
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	9,555	shows oil
Seaboard Oil Corp., No. 1 Wasco, Kern Co.	26-27-24	5,271	sd. sh. drlg.
Belridge Oil Co., No. 3-35 North Belridge, Kern Co.	35-27-20	1,756	sd. sh. drlg.
Belridge Oil Co., No. 24-35 North Belridge, Kern Co.	35-27-20	5,683	cmtd. 5,683
Belridge Oil Co., No. 62-27 North Belridge, Kern Co.	27-27-20	7,940	br. sh. drlg.
Belridge Oil Co., No. 21-1 North Belridge, Kern Co.	1-28-20	6,872	br. sh. drlg.
Tide Water Associated, No. 6 North Belridge, Kern	34-27-20	2,630	sd. sh. drlg.
Doyle Pet. Co., No. 2 Quinn, Jasmine, Kern Co.	15-25-27	1,990	sd. sh. drlg.
Honolulu Oil Corp., No. 25 Round Mountain, Kern Co.	18-28-29	2,223	rig. to pump
Tide Associated, No. 3 Kern Front, Kern Co.	4-28-27	2,735	pump. 40 b.d.
Tide Water Associated, No. 42 Kern Front, Kern Co.	23-28-27	2,200	rig. to pump
Dougan Oil Co., No. 2 Kern Front, Kern Co.	17-28-27	2,890	O.S. drlg.
M. H. Whittier Co., No. 4 Kern Front, Kern Co.	16-28-27	2,826	pump. 115 b.d.
Oil, Inc., No. 7-2 Kern Front, Kern Co.	13-28-27	1,190	recmtd. 1,145
Barnhart & Morrow, No. 1 Davies, Kern Front, Kern	3-28-27	2,631	redrlg. 2,612
California Star Oil Co., No. 7-80 Kern Front, Kern Co.	22-28-27	2,654	tested wet
California Star Oil Co., No. 9-40 Kern Front, Kern Co.	22-28-27	2,647	pump. 165 b.d.
Standard Oil Co., No. 5 Ward, Kern Front, Kern Co.	24-28-27	1,970	bailing
Standard Oil Co., No. 5-9 Kern Front, Kern Co.	9-28-27	2,810	bailing
Pioneer Oil Co., No. 1 Kern Front, Kern Co.	18-28-28	1,308	P.B. 1,110
Milburn, E. B., No. 2 Kern Front, Kern Co.	10-28-27	1,075	sd. sh. drlg.
Texas Co., No. 6 Lehman, Kern Front, Kern Co.	23-28-27	2,008	completing
National Oil Co., No. 9 Gates, Kern Front, Kern Co.	2-28-29	1,821	P.B. 1,481
Terry & Associates, No. 1-A Kern River, Kern Co.	4-29-28	1,990	sd. sh. drlg.
Superior Oil Co., No. 1 Bakersfield, Kern Co.	36-29-28	4,001	sd. sh. drlg.
Golden Bear Oil Co., No. 6 Premier, Kern Co.	32-27-27	2,683	pump. 295 b.d.
Pebble Beach Oil Co., No. 4 Newhope, Premier, Kern	29-27-27	2,659	flow. 290 b.d.
Ekoh Oil Co., No. 2 Vedder, Mount Poso, Kern Co.	28-26-28	1,454	hd. sd. drlg.
C. C. M. Oil Co., No. 1 Alford, Mount Poso, Kern Co.	35-27-27	3,937	hd. sh. drlg.
Chevalier, J. J., No. 3 S.P., Mount Poso, Kern Co.	3-27-28	950	sd. sh. drlg.
Recovery Oil Co., No. 2 S.P., Mount Poso, Kern Co.	33-26-28	1,182	sd. sh. drlg.
Magee, H. H., No. 2 Fruitvale, Kern Co.	23-29-27	3,235	pump. water
H. & H. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,256	cleaning out
Western Gulf Oil Co., No. 35 Fruitvale, Kern Co.	21-29-27	3,952	P.B. 3,940
Western Gulf Oil Co., No. 35 Fruitvale, Kern Co.	21-29-27	3,600	sd. sh. drlg.
Kasey & Associates, No. 1 Fruitvale, Kern Co.	23-29-27	3,114	P.B. 2,010
Exeter Oil Co., No. 2 Fruitvale, Kern Co.	21-29-27	4,150	cmtd.
Pal-Pen Oil Co., No. 2 Fruitvale, Kern Co.	23-29-27	2,670	sd. sh. drlg.
Banducci, L. J., No. 2-T Fruitvale, Kern Co.	26-29-27	3,392	pump. 110 b.d.
Kelley, C. J., No. 2 Fruitvale, Kern Co.	23-29-27	3,150	sd. sh. drlg.
American Expl. Co., No. 1 Mountain View, Kern Co.	18-30-29	2,060	sd. sh. drlg.
Vesta Oil Co., No. 1 Mountain View, Kern Co.	19-30-29	4,970	recmtd. 4,785
Wood-Callahan Oil Co., No. 3 Mountain View, Kern	25-30-28	5,965	tested wet
Hogan Pet. Co., No. 4 Symons, Mountain View, Kern	5-31-29	6,496	sd. sh. drlg.
Hogan Pet. Co., No. 8 Wharton, Mountain View, Kern	32-30-29	5,866	completing
Liko Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	5,394	cmtd. 5,242
Ohio Oil Co., No. 1-B Derby, Mountain View, Kern Co.	33-30-29	5,165	flow. 996 b.d.
Trico Oil Co., No. 2 Wilson, Mountain View, Kern Co.	13-30-28	5,000	sd. sh. drlg.
General Pet. Corp., No. 5 Mountain View, Kern Co.	19-30-29	2,251	sd. sh. drlg.
Mohawk Pet. Co., No. 9-C Mountain View, Kern Co.	30-30-29	5,915	sd. sh. drlg.
Allied Pet. Co., No. 20 Mountain View, Kern Co.	19-30-29	5,457	redrlg. 5,150
Metro Oil Co., No. 1 Edison, Kern Co.	6-30-29	1,278	sd. sh. drlg.
Johnson-Leaf Oil Co., No. 1 Edison, Kern Co.	24-30-29	1,525	redrlg. 1,360
General Pet. Corp., No. 1 Arvin, Kern Co.	26-31-29	7,462	P.B. 7,454
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	10,050	fish. D.P.
Tide Water Associated, No. 1 Rio Bravo, Kern Co.	30-29-25	9,002	may abdn.
Union Oil Co., No. 1-34 Rio Bravo, Kern Co.	34-28-25	2,797	sd. sh. drlg.
Continental Oil Co., No. 1 Rosedale, Kern Co.	12-29-26	6,581	gr. sd. drlg.
Standard Oil Co., No. 11-2 Greeley, Kern Co.	29-29-26	8,020	sd. sh. drlg.
Standard Oil Co., No. 11-3 Greeley, Kern Co.	20-29-26	7,726	looks wet
Standard Oil Co., No. 12-1 Greeley, Kern Co.	30-29-26	7,884	fish. D.P.
Standard Oil Co., No. 14-1 Greeley, Kern Co.	4-30-26	7,930	sd. sh. drlg.
Mohawk Pet. Co., No. 1 Greeley, Kern Co.	23-29-25	6,971	sd. sh. drlg.
Shell Oil Co., No. 21-14 Old River, Kern Co.	14-30-25	5,296	sd. sh. drlg.
Shell Oil Co., No. 23-30 Ten Section, Kern Co.	30-30-26	7,774	sd. sh. drlg.
Shell Oil Co., No. 1 Ten Section, Kern Co.	29-30-26	7,994	deepening
Signal Oil & Gas Co., No. 1 Ten Section, Kern Co.	21-30-27	7,680	sd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	10,590	sd. sh. drlg.
Ohio Oil Co., No. 4-A Buena Vista Lake, Kern Co.	32-31-26	5,276	completing
C. C. M. Oil Co. No. 23-21 Midway-Sunset, Kern Co.	21-32-23	1,931	sd. sh. drlg.
C. C. M. Oil Co., No. 26-21 Midway-Sunset, Kern Co.	21-32-23	2,335	pump. 80 b.d.
Midcrude Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	1,590	sd. sh. drlg.
General Pet. Corp., No. 49 Midway-Sunset, Kern Co.	24-31-23	4,424	bailing
R. & W. Oil Co., No. 4 Midway-Sunset, Kern Co.	6-11-23	3,420	test. W.S.O.
Colby, L. W., No. 1 Midway-Sunset, Kern Co.	12-11-23	591	sd. sh. drlg.
Merritt-Annex Oil Co., No. 4 Midway-Sunset, Kern	25-12-24	3,003	completing
Standard Oil Co., No. 7-33-D Midway-Sunset, Kern	33-32-24	3,155	pump. 740 b.d.
Standard Oil Co., No. 123-33-D Midway-Sunset, Kern	33-32-24	3,140	sd. sh. drlg.
Standard Oil Co., No. 55-33-D Midway-Sunset, Kern	33-32-24	3,305	P.B. 3,110
Shell Oil Co., No. 2 McKeon, Midway-Sunset, Kern	22-32-23	1,264	sd. sh. drlg.
Linderman Oil Corp., No. 1 Midway-Sunset, Kern Co.	22-32-23	1,560	sd. sh. drlg.
Richfield Oil Co., No. 12 Midway-Sunset, Kern Co.	6-32-23	1,635	P.B. 1,502
Richfield Oil Co., No. 8-A Midway-Sunset, Kern Co.	6-32-23	1,309	cleaning out
Holly Dev. Co., No. 1 Midway-Sunset, Kern Co.	22-32-23	2,326	O.S. drlg.
North American Oil Co., No. 5 Midway-Sunset, Kern	25-12-24	4,167	sd. sh. drlg.
Texas Co., No. 20 Midway-Sunset, Kern Co.	32-24-24	1,860	sd. sh. drlg.
Union Oil Co., No. 5 Williams, Midway-Sunset, Kern	22-32-23	2,050	pump. 649 b.d.
Union Oil Co., No. 5 Keene, Midway-Sunset, Kern Co.	22-32-23	1,721	sd. sh. drlg.
Hancock Oil Co., No. 6 Midway-Sunset, Kern Co.	8-11-23	1,561	sd. sh. drlg.
Valley Oil Co., No. 1 Midway-Sunset, Kern Co.	18-32-23	2,770	sd. sh. drlg.
Zamloch, Carl, No. 2 Midway-Sunset, Kern Co.	22-32-23	2,080	sd. sh. drlg.
Alford Oil Co., No. 8 Fried, Midway-Sunset, Kern Co.	25-12-24	2,800	sd. sh. drlg.
Quality Oil Co., No. 4 Bull, Midway-Sunset, Kern Co.	22-32-23	2,200	rig. to pump
Quality Oil Co., No. 5 Bull, Midway-Sunset, Kern Co.	22-32-23	2,020	sd. sh. drlg.
Quality Oil Co., No. 5 W.P., Midway-Sunset, Kern Co.	27-32-23	1,675	sd. sh. drlg.
Honolulu Oil Corp., No. 46 Midway-Sunset, Kern Co.	14-32-24	3,625	completing
Petrolia Royalties, No. 1 Midway-Sunset, Kern Co.	21-32-22	1,160	rig. to pump

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

DEPARTMENT OF GEOGRAPHY
THE UNIVERSITY OF

Elk Hills Pet. Co., No. 1 Elk Hills, Kern Co.	14-31-24	6,870	sd. sh. drlg.
Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co.	33-11-19	4,969	idle
Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co.	33-11-19	4,474	swabbing
Reserve Oil & Gas Co., No. 33-3 Tejon, Kern Co.	33-11-19	4,431	shut in
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	7,584	sd. sh. drlg.
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,530	will P.B.
Tide Water Associated, No. 3 Kettleman No., Fresno	35-21-17	8,858	cleaning out
Union Oil Co., No. 2 King, Kettleman North, Fresno	29-21-17	8,500	redrlg. 7,076
K.N.D.A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,450	sd. sh. drlg.
K.N.D.A., No. 36-28-J Kettleman North, Fresno Co.	28-21-17	8,095	flow. 2,932 b.d.
K.N.D.A., No. 56-28-J Kettleman North, Fresno Co.	28-21-17	6,100	br. sh. drlg.
K.N.D.A., No. 65-28-J Kettleman North, Fresno Co.	28-21-17	7,350	hd. sd. drlg.
K.N.D.A., No. 85-32-J Kettleman North, Fresno Co.	32-21-17	8,500	C.P. 8,256
K.N.D.A., No. 63-34-J Kettleman North, Fresno Co.	34-21-17	7,197	sd. sh. drlg.
K.N.D.A., No. 61-4-P Kettleman North, Fresno Co.	4-22-17	7,060	br. sh. drlg.
Standard Oil, No. 8-19-J Kettleman North, Fresno	19-21-17	8,500	flow. 969 b.d.
Standard Oil, No. 38-33-J Kettleman North, Fresno	33-21-17	7,595	cmtd. 7,582
Standard Oil, No. 81-33-J Kettleman North, Fresno	33-21-17	5,797	sd. sh. drlg.
Standard Oil, No. 78-3-P Kettleman North, Kings	3-22-17	7,460	sd. sh. drlg.
Temblor Oil Co., No. 1 Kettleman Middle, Kings Co.	25-23-18	5,935	idle
Central Cal. Utilities, No. 3 Dudley, Kings Co.	11-23-19	1,221	tested wet
Clare, A. S., No. 1 Corcoran, Kings Co.	30-20-22	366	sd. sh. drlg.
Norell, T. G., No. 1 Tulare Lake, Kings Co.	7-21-21	6,179	resume work
Stone, G. S., No. 1 Tulare Lake, Kings Co.	25-20-20	1,101	sd. sh. drlg.
Tide Water Associated Oil Co., No. 2 Avenal, Kings	35-23-17	2,802	sd. sh. drlg.
Barnsdall Oil Co., No. 1 K.C.L., San Luis Obispo Co.	1-32-20	3,043	sd. sh. drlg.
Burkholder Oil Co., No. 1 Clay, San Luis Obispo Co.	14-10-26	770	sd. sh. drlg.
Calif. Prod. Co., No. 1 Pattiway, San Luis Obispo Co.	19-10-24	751	sd. sh. drlg.
Temblor Oil Co., No. 1 Panorama, San Luis Obispo	22-32-21	573	sd. sh. drlg.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,350	sd. sh. drlg.
Martin, J. D., No. 4-A Pismo, San Luis Obipso Co.	5-32-13	3,291	sd. sh. drlg.
Pismo Pet. Co., No. 1 Pismo, San Luis Obispo Co.	5-32-13	3,552	sd. sh. drlg.
Texas Co., No. 1 King City, Monterey Co.	30-19-7	4,150	br. sh. drlg.
Anderson, Amil, No. 1 Cholame, Monterey Co.	15-24-14	500	sd. sh. drlg.
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	8,994	P.B. 8,750
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	7,576	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	7,418	recmtd. 6,580
Amerada Pet. Co., No. 2 Drouin, Rio Vista, Solano Co.	26- 4-2	4,463	sd. sh. drlg.
Tide Water A. O. Co., No. 1 Sargent, San Benito Co.	5-12-4	6,860	hd. sd. drlg.
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15-1	5,210	cleaning out
Jennings, E. P., No. 1 Allensworth, Tulare Co.	4-24-23	2,709	P.B. 2,690
Coast Expl. Co., No. 1 Staten, San Joaquin Co.	2- 3-4	451	cmtd. 405
Standard Oil Co., No. 3 McDonald, San Joaquin Co.	24- 2-4	5,155	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Caminol Oil Co., No. 1 El Segundo, Los Angeles Co.	18- 3-14	7,367	flow. 100 b.d.
Richfield Oil Co., No. 5 El Segundo, Los Angeles Co.	18- 3-14	3,181	sd. sh. drlg.
Richfield Oil Co., No. 1 S.F., El Segundo, Los Angeles	18- 3-14	5,432	sd. sh. drlg.
Ohio Oil Co., No. 3 El Segundo, Los Angeles Co.	7- 3-14	6,282	sd. sh. drlg.
Texas Co., No. 2-1 El Segundo, Los Angeles Co.	17- 3-14	7,715	rig. to pump
Republic Pet. Co., No. 5 El Segundo, Los Angeles Co.	18- 3-14	7,387	flow. 200 b.d.
Royalty Service Corp., No. 1 El Segundo, Los Angeles	7- 3-14	7,389	rig. compres.
Union Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	6,740	sd. sh. drlg.
Leora Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	5,466	P.B. 3,925
Signal Finance Co., No. 1 Hawthorne, Los Angeles	10- 3-14	9,395	idle
C. C. M. Oil Co., No. 15 Torrance, Los Angeles Co.	31- 3-14	4,132	hd. sh. drlg.
Two & One Oil Co., No. 6 Torrance, Los Angeles Co.	31- 3-14	4,440	pump. 75 b.d.
Willett, P. W., No. 1 Torrance, Los Angeles Co.	18- 4-14	3,590	pump. 310 b.d.
Abrams, John, & Assoc., No. 1 Torrance, Los Angeles	16- 4-14	4,068	P.B. 4,015
Calmore Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	4,882	sd. sh. drlg.
Swyer Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	4,330	reamnig
McLaren & Assoc., No. 1 Palos Verdes, Los Angeles	27- 4-14	3,992	redrlg. 1,765
Standard Oil Co., No. 82 Inglewood, Los Angeles Co.	8- 2-14	3,953	flow. 745 b.d.
Shell Oil Co., No. 89 Reyes, Dominguez, Los Angeles	33- 3-13	6,804	sd. sh. drlg.
Shell Oil Co., No. 90 Reyes, Dominguez, Los Angeles	33- 3-13	8,640	O.S. drlg.
Shell Oil Co., No. 91 Reyes, Dominguez, Los Angeles	33- 3-13	1,981	sd. sh. drlg.
Union Oil, No. 50 Callender, Dominguez, Los Angeles	33- 3-13	10,301	sd. sh. drlg.
Union Oil, No. 52 Callender, Dominguez, Los Angeles	33- 3-13	3,924	sd. sh. drlg.
Union Oil, No. 53 Callender, Dominguez, Los Angeles	33- 3-13	7,540	sd. sh. drlg.
Union Oil, No. 9 Carson, Dominguez, Los Angeles	33- 3-13	7,565	sd. sh. drlg.
Union Oil, No. 46 Hellman, Dominguez, Los Angeles	33- 3-13	3,976	sd. sh. drlg.
Shell Oil Co., No. 1 Rosecrans, Los Angeles Co.	20- 3-13	7,744	P.B. 7,602
Barnsdall Oil, No. 12 O'Dea, Rosecrans, Los Angeles	18- 3-13	4,195	cleaning out
Union Oil, No. 17 D.R., Playa Del Rey, Los Angeles	27- 2-15	1,740	sd. sh. drlg.
Burt, A. G., No. 1 Newhall, Los Angeles Co.	36- 4-17	760	sd. sh. drlg.
Holbrook Oil Co., No. 1 Newhall, Los Angeles Co.	28- 4-16	5,050	br. sh. drlg.
General Pet., No. 1 Ford, Wilmington, Los Angeles	4- 5-13	2,476	cmtd. 2,476
General Pet., No. 2 Ford, Wilmington, Los Angeles	4- 5-13	3,141	sd. sh. drlg.
General Pet., No. 3 Ford, Wilmington, Los Angeles	4- 5-13	2,390	sd. sh. drlg.
General Pet., No. 4 Ford, Wilmington, Los Angeles	4- 5-13	2,311	sd. sh. drlg.
General Pet., No. 5 Ford, Wilmington, Los Angeles	4- 5-13	1,971	sd. sh. drlg.
General Pet. Corp., No. 2-P Wilmington, Los Angeles	4- 5-13	1,984	sd. sh. drlg.
Getty Oil Co., No. 4 Wilmington, Los Angeles Co.	33- 4-13	3,594	flow. 440 b.d.
Getty Oil Co., No. 5 Wilmington, Los Angeles Co.	33- 4-13	2,560	sd. sh. drlg.
Getty Oil Co., No. 6 Wilmington, Los Angeles Co.	33- 4-13	3,315	flow. 680 b.d.
Bankline Oil Co., No. 13-D Wilmington, Los Angeles	34- 4-13	2,794	sd. sh. drlg.
Crail Bros., Inc., No. 1 Wilmington, Los Angeles Co.	33- 4-13	3,555	flow. 398 b.d.
Pongratz Oil Co., No. 1 Wilmington, Los Angeles Co.	33- 4-13	2,598	sd. sh. drlg.
Union Pacific, No. 1 Wilmington, Los Angeles Co.	4- 5-13	3,557	flow. 1,960 b.d.
Union Pacific, No. 2 Wilmington, Los Angeles Co.	4- 5-13	3,576	flow. 1,092 b.d.
Union Pacific, No. 3 Wilmington, Los Angeles Co.	4- 5-13	3,540	sd. sh. drlg.
Union Pacific, No. 5 Wilmington, Los Angeles Co.	4- 5-13	2,543	sd. sh. drlg.
Union Pacific, No. 8 Wilmington, Los Angeles Co.	33- 4-13	2,550	coring
Ring Oil Co., No. 1 Wilmington, Los Angeles Co.	5- 5-13	3,495	sd. sh. drlg.
Royalty Service, No. 21-5 Wilmington, Los Angeles	34- 4-13	3,052	flow. 200 b.d.
Royalty Service, No. 3-C Wilmington, Los Angeles	5- 5-13	2,240	sd. sh. drlg.
Royalty Service, No. 4-C Wilmington, Los Angeles	33- 4-13	2,571	sd. sh. drlg.
Royalty Service, No. 1-B Wilmington, Los Angeles	33- 4-13	2,175	sd. sh. drlg.
Graham-Loftus Oil, No. 1 Wilmington, Los Angeles	33- 4-13	1,755	sd. sh. drlg.
Gauthier Oil Co., No. 2 Wilmington, Los Angeles Co.	27- 4-13	3,740	reaming
Drillers, Inc., No. 1 Whittier, Los Angeles Co.	22- 2-11	1,654	sd. sh. drlg.
Richfield Oil, No. 2 Nutt, Montebello, Los Angeles	5- 2-11	5,713	flow. 35 b.d.
Richfield Oil, No. 1 Estrada, Montebello, Los Angeles	5- 2-11	4,173	sd. sh. drlg.
Texas Co., No. 16 Baldwin, Montebello, Los Angeles	6- 2-11	5,634	swabbing
St. Helens Pet., No. 6 P.&B., Montebello, Los Angeles	5- 2-11	7,199	C.P. 5,770
Union Oil Co., No. 26 Montebello, Los Angeles Co.	1- 2-12	4,076	sd. sh. drlg.
Texas Co., No. 13-H.K., Long Beach, Los Angeles Co.	19- 4-12	3,265	sd. sh. drlg.
Hilltop Oil Co., No. 1 Long Beach, Los Angeles Co.	19- 4-12	2,140	sd. sh. drlg.
Caltana Corp., No. 1 Artesia, Los Angeles Co.	11- 4-12	180	sd. sh. drlg.
Hathaway, No. 2 Fulton, Santa Fe Spgs., Los Angeles	6- 3-11	4,180	cmtd. 4,120
Union Oil Co., No. 100 Santa Fe Spgs., Los Angeles	6- 3-11	10,789	fish. D.P.
Julian & Criswell, No. 1 Walnut, Los Angeles Co.	5- 2-9	1,380	hd. sh. drlg.
Re-Mine Oil Co., No. 2 Huntington, Orange Co.	2- 6-11	4,570	rig. to pump
Texas Co., No. 8 Brown, Huntington, Orange Co.	11- 6-11	4,000	sd. sh. drlg.
Richrow Oil Co., No. 2 Huntington, Orange Co.	34- 5-11	5,235	flow. 380 b.d.
Orco Oil Co., No. 5 Huntington, Orange Co.	2- 6-11	4,697	cmtd. fish
Union Oil Co., No. 10-C Huntington, Orange Co.	34- 5-11	1,650	sd. sh. drlg.
Union Oil Co., No. 24-C Huntington, Orange Co.	34- 5-11	4,292	sd. sh. drlg.
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	6,481	br. sh. drlg.
Fullerton Oil Co., No. 20 Brea, Orange Co.	2- 3-10	5,483	bailing
Standard Oil Co., No. 63 Emery, West Coyote, Orange	24- 3-11	3,170	sd. sh. drlg.
Hogan Pet. Co., No. 1 McNally, West Coyote, Orange	23- 3-11	3,487	sd. sh. drlg.
Bandini Pet. Co., No. 1 East Coyote, Orange Co.	17- 3-9	2,855	rig. to pump
Dolicia Oil Co., No. 2 East Coyote, Orange Co.	24- 3-10	3,534	pump. 151 b.d.
Tide Water A. O. Co., No. 52 East Coyote, Orange Co.	13- 3-10	3,650	rig. to pump
Standard Oil Co., No. 2-8 East Coyote, Orange Co.	22- 3-10	4,275	sd. sh. drlg.
Shell Oil Co., No. 1 Mathis, Anaheim, Orange Co.	23- 4-10	4,954	sd. sh. drlg.
Joseph, Arthur, No. 1 Richfield, Orange Co.	29- 3-9	3,630	sd. sh. drlg.
Principal Oil Co., No. 1 Richfield, Orange Co.	36- 3-9	1,570	idle
Union Oil Co., No. 8 Coyle, Richfield, Orange Co.	29- 3-9	3,413	sd. sh. drlg.

KANSAS

Week ending April 10 (Descriptions are east unless marked otherwise)

Barton County

S. E. Bailey No. 1 Hammeke, NE NE SW sec. 12-18-12w. O.W.D.D.; set 8-in. csg. 2,095 ft.

C. L. Carlock No. 1 Ehly, NE NE SE sec. 5-18-11w. Set 13-in. csg. 176 ft.; W.O.C.

Vickers Pet. Co. et al No. 1 Leibel, SE NE SE sec. 18-18-11w. Anhy. 681 ft.; drlg. 1,975 ft.

George Dickey et al No. 1 Boger, SE SE NE sec. 15-16-13w. Drlg. 293 ft.

Hendon Drlg. Co. and Morgan & Flynn No. 1 Robenseifer, C NW sec. 7-18-15w. Anhy. 1,067 ft.; run 10-in. 1,076 ft.

Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. Sil. 3,295 ft.

LEGAL

Department of the Interior, U. S. Land Office, Las Cruces, New Mexico. Notice is hereby given that the W½ and W½ SE¼ Sec. 15, T. 17 S., R. 32 E., N.M.P.M., 400 acres, Baish oil and gas field, New Mexico, is offered to the responsible qualified bidder of the highest bonus per acre for lease under Section 17 of the act of February 25, 1920 (41 Stat. 437) as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at ten oclock, A.M., May 18, 1937. The minimum bid which will be accepted is $1.50 per acre. The land will be offered as a single unit. The successful bidder must deposit on the date of sale a certified check on a solvent bank, or cash, for one-fifth of the amount and file the showing of qualifications to receive a lease required by Section 7 of Circular 1386. The remainder of the bonus bid and the annual rental at the rate of $1.00 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

(cor.); T.D. 3,325 ft.; acd.; P. 824 B.O. in 12 hrs.

S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. T.D. 3,443 ft.; D.&A.

C. L. Price et al No. 1 Kraft, SW NW NE sec. 10-17-11w. K.C. 2,990 ft.; pay 3,224-26 ft.; S.O.&W.; U.R. 7-in.

Stanolind O. & G. Co. No. 1 Meggars, SW cor. sec. 21-20-11w. R.U.R.

E. F. Wakefield et al No. 1 Scheuerman, NE NE SW sec. 31-16-15w. Set 12-in. 450 ft.; drlg. 760 ft.

C. H. Weaver et al No. 1 Stumps, NE cor. sec. 3-17-12w. Spudded.

Ralph Wixson and Union O. & G. Co. No. 1 Frederick, NW cor. sec. 12-16-13w. Anhy. 862 ft.; drlg. 2,295 ft.

Butler County

A. M. Landon et al No. 1 McCaig, NE NE SE sec. 13-28-6. Sd. 2,720-40 ft.; P.B. to 2,737 ft.; swb. 100 B.O. in 24 hrs.

Sid Neff et al No. 1 Church, SW NE SE sec. 8-28-5. O.W.D.D.; fsg. 1,400 ft.

C. L. Seibel et al No. 1 Bisagno, SE SE NW sec. 24-25-6e. Drlg. 1,565 ft.

Vickers Pet. Co. No. 1 Voth, C N½ NE NE sec. 32-24-4e. Drlg. 1,397 ft.

Chautauqua County

Ira Scott et al No. 1 Lamba, SW NW NE sec. 18-33-13. S.D. 410 ft.

E. J. Shaffer No. 1 Nuckolls, NW cor. sec. 12-33-19. Drlg. 900 ft.

W. M. McKnabb No. 1 Griffith, SW cor. sec. 11-32-10. Drlg. 560 ft.

Cowley County

Bess & Gralapp et al No. 1 Wakefield, NE SE SW sec. 18-30-6. R.U.

Elmer Ash et al No. 1 Bolack, NW NW SE sec. 22-32-6. Rig.

W. M. McKnabb No. 1 Community, C NE NW sec. 14-34-3e. O.W.D.D.; Sil. 3,862 ft.; T.D. 3,880 ft.; D.&A.

W. M. McKnabb No. 1 Weldschmidt, SW SW NW sec. 18-34-6e. Base L. 3,449 ft.; Wilcox 3,510 ft.; T.D. 3,520 ft.; D.&A.

Tom Palmer No. 1-A Lowe, SW SE SE sec. 3-32-5. Drlg. 2,005 ft.

Ryan Consolidated Co. No. 1 Couch, SW SW SE sec. 13-30-5. Drlg. 2,050 ft.

L. H. Wentz and Amerada Pet. Corp. No. 1 Rush, NW SW SW sec. 36-34-6e. T.D. 3,046 ft.; D.&A.

Decatur County

C. L. Bruce et al No. 1 Newbold, C NE SE sec. 34-2s-28w. R.U.R.

Elk County

L. H. Wentz et al No. 1 Love, SW SE NE sec. 35-30-9. Drlg. 910 ft.

Ellis County

Billings No. 1 Smith, SE SE NW sec. 14-12-16w. R.U.

Bridgeport Machine Co. et al No. 1 Froelick, NW NW SE sec. 4-13-16w. Anhy. 1,115 ft.; U.R. 1,590 ft.

Elwell and Tree Oil Co. No. 1 Wickham, SW SW NE sec. 10-11-19w. Rig.

Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. Pay 3,694-98 ft.; swb. 48 B.O. and swbd. down; T.D. 3,699 ft.; P.B. 3,697½ ft.; P. 13 B.O. and pumped off.

Larlo O. & G. Co. et al No. 1 Henderson, SW SW NE sec. 27-11-18w. Drlg. 1,030 ft.

Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w. U.R. 8-in. at 3,470 ft.

J. J. Muth No. 1 Penney, NW SE SE sec. 29-14-18w. R.U.

Noble Pet. Corp. No. 1 O'Laughlin, NW NW SE sec. 13-12-19w. Anhy. 1,550 ft.; U.R. 8-in. at 2,745 ft.

Sunray Oil Co. No. 1 Befort, NE cor. sec. 11-14-20w. Sil. 3,900 ft.; T.D. 3,914 ft.; D.&A.

Earl Wakefield No. 1 Putnam Mortgage Co., SE SE NW sec. 32-15-17w. Drlg. 2,430 ft.

Ellsworth County

Frost et al No. 1 Dolechek, NE NE SW sec. 36-14-8w. H.F.W. 2,585 ft.; U.R. at 2,605 ft.

Orville Lea No. 1 Larkin, NW cor. sec. 15-16-8w. Spudded.

Finney County

Keith & Olson Drlg. Co. No. 1 Ely, NW NW SW sec. 34-22-29w. Viola 5,315 ft.; drlg. 5,502 ft.

Greenwood County

L. S. Bolwanz No. 1 Travelers, C SW SW sec. 23-26-10. Drlg. 1,138 ft.

Lauck & Moncrief No. 1 Gruber, NW cor. sec. 5-23-13. T.D. 1,838 ft.; D.&A.

Ohio Oil Co. No. 1 Schwab, SE SW SE sec. 9-24-10. Viola 2,763-66 ft., acd.; P. 27 B.O. and 15% wtr. in 24 hrs.

Dr. Shippey No. 1 Boone, NE NE NW sec. 21-26-12. O.W.D.D.; S.D. 1,868 ft.

Shull Drlg. Co. No. 1 Cannon, NE SE NE sec. 23-25-12. Drlg. 741 ft.

Harper County

Carter Oil Co. et al No. 1 Seihart Est., C SW NW sec. 4-34-8w. Fsg. 4,350 ft.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Viola 3,695 ft.; Wilcox 3,711 ft.; fsg.

Kearny County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhy. 1,900 ft.; set 7-in. csg. at 2,780 ft.; 1,500,000 ft. gas.

J. L. Murphy No. 1 Masonic Home, C NW sec. 1-26-36w. R.U.R.

Logan County

W. H. Boucher No. 1 Wright, C SE SE sec. 12-15-35w. Fsg. 4,025 ft.

Lyon County

Davis & Sory No. 1 Byrd, SW SW SE sec. 32-21-11. R.U.M.

Young et al No. 1-A Murphy, SE NW NE sec. 32-21-11. Fsg. 1,380 ft.

McPherson County

Bradley Bros. No. 1 Barnholt, SW SW SE sec. 30-20-5w. S.D. 850 ft.

Fred C. Frank et al No. 1 Doles, SE NW NE sec. 12-19-1w. S.D. 600 ft.

Hutchinson O. & G. Co. et al No. 1 Berg, SW SW SE sec. 15-20-3w. U.R. 8-in. 3,080 ft.

Wamhoff et al No. 1 Nuse, SE NE SW sec. 18-18-4w. Set 10-in. 110 ft.; W.O.C.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. Drlg. 2,620 ft.

Ness County

Jones & Lane No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Rig.

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. Cong. 4,044 ft.; L. 4,050 ft.; U.R. 6-in. 4,052 ft.

Osborne County

J. E. Waldron No. 1 Neuschwanger, SE NE NW sec. 11-8-14w. Spd.

Pawnee County

Capshaw et al No. 1 Riederer, C W½ NW SE sec. 29-21-19w. Set csg. 155 ft.

Reno County

Atlantic Ref. Co. No. 1 Page, SE NW NW sec. 19-23-7w. Drlg. 3,745 ft.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. Sil. 4,010-31 ft. T.D.; D.&A.

Helmerich & Payne et al No. 1 Benson,

NE cor. sec. 5-25-6w. O.W.D.D.; T.D. 4,223 ft.; D.&A.

Imo O. & G. Co. and others No. 1 Watkins, SE cor. sec. 14-22-7w. Drlg. 550 ft.

Clyde Pulse No. 1 Payne, SW NW SE sec. 4-22-7w. Cong. 3,398 ft.; Chat. 3,426 ft.; H.F.W. 3,440 ft., T.D.; P.B. 3,287 ft.; P. 18 B.O. in 3 hrs.; acd.

Olson Drlg. Co. et al No 1 Herriman, NW cor. sec. 22-24-8w. Drlg. 3,518 ft.

Sinclair Prairie Oil Co. No. 1 Natt, NW NW SE sec. 32-26-4w. R.U.R.

Westgate-Greenland Oil Co. No. 1 O'Sullivan, SW SW NE sec. 24-23-5. Set 8-in. at 3,385 ft.; R.U.S.T.

Rice County

L. E. Douglass No. 1 Coyne, NE SE SE sec. 24-21-8w. S.D. 2,415 ft.

Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Viola 3,588 ft.; drlg. 3,640 ft.

John Hanna et al No. 1 Fulton, NW NW NE sec. 24-10-6w. Topeka 2,290 ft.; drlg. 2,450 ft.

T. C. Johnson No. 1 Shubert, SW cor. sec. 9-20-10w. K.C. 3,077 ft.; set 6-in. 3,083 ft.

Manning & Martin et al No. 1 Mathes, SE SW NE sec. 27-21-8w. Sil. 3,685 ft.; T.D. 3,710 ft.; D.&A.

Fred Phillips et al No. 1 Hubenett, SW NW SW sec. 23-20-6w. Drlg. 1,790 ft.

Roy Ramsey et al No. 1 Malone, NW NW NE sec. 1-20-10w. Sil. 3,298 ft.; T.D. 3,310 ft.; D.&A.

Skelly Oil Co. & Ewers Simpson Oil Corp. No. 1 Linville, SW NW NE sec. 2-20-10w. K.C. 3,008 ft.; Simp. 3,295 ft.; Sil. 3,315-27 ft.; run 7-in.

C. E. W. Skiles et al No. 1 Helmer, NW NW NE sec. 7-19-18w. R.U.

Union Oil & Refining Co. et al No. 1 Baker, SW SW NE sec. 33-20-6w. Run 13-in. 1,500 ft.

W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Drlg. 1,545 ft.

Rooks County

Basin Oil Co. No. 1 Baxa, NE cor. sec. 23-9-17w. Anhy. 1,437 ft.; U.R. 2,900 ft.

Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. K.C. 3,163 ft.; S.D. 3,195 ft.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,301 ft.

S. C. Hoel et al No. 1 Ives, SW SW NE sec. 11-7-18w. R.U.

Jones Bros. No. 1 Wiss, NW cor. sec. 8-10-18w. Anhy. 1,620 ft.; drlg. 1,893 ft.

Phillips Pet. Co. No. 1 Mainquist, SW SW NW sec. 9-9-17w. Set 12-in. 1,006 ft.; W.O.C. 1,100 ft.

Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 35-7s-17w. H.F.W. 3,190 ft., T.D.; P.B. to 3,118 ft.; P. 20 B.P.D.

Twin Drlg. Co. No. 1 Doughty, SW cor. sec. 15-8-19w. O.W.D.D.; drlg. 3,347 ft.

Rush County

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. Rig.

S. A. Murphy et al No. 1 Roth, NW NW SW sec. 21-16-18w. Anhy. 1,159 ft.; T.D. 2,650 ft.; est. 15,000,000 ft. gas; rig burned.

Russell County

Empire O. & R. Co. No. 1 Vaughn, SW cor. sec. 17-14-14w. K.C. 3,015 ft.; T.D. 3,034 ft.; P. 1,482 B.O. and 5% wtr. in 22 hrs.; comp.

Equity Gas Co. No. 1 Harbaugh, NW NE SW sec. 19-13-12w. Anhy. 767 ft.; drlg. 930 ft.

Goldstein and Vernon Oil & Gas Co. No. 1 Steinert Estate, NE SE NW sec. 34-15-15w. R.U.

S. M. Murphy et al No. 1 Deines, SE SE SW sec. 36-15-15w. Anhy. 957 ft.; run 10-in. 965 ft.

Saline County

Ryan Consd. No. 1 Wuerth, SW SW NW sec. 28-14-2w. T.D. 3,415 ft.; D.&A.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. Chat 2,822 ft.; drlg. 2,983 ft.

Empire O. & R. Co. No. 1 Kimel, NW cor. sec. 4-29-2w. Drlg. 3,667 ft.

Roxana Drlg. Co. et al No. 1 Woodman, SW NW SW sec. 26-26-1w. Fsg. 2,094 ft.

E. B. Shawver No. 1 Furman, SW NE SE sec. 24-29-3w. Drlg. 604 ft.

E. M. Swearer et al No. 1 Thome, SW SW NW sec. 19-28-1w. Set 7-in. 3,425 ft.; R.U.S.T.

Stafford County

Empire O. & R. Co. No. 1 O'Connor, NE cor. sec. 17-24-15w. Set 7-in. 4,133 ft.; W.O.C.

W. P. Faulkner No. 1 Schulz, SE SE NE sec. 6-22-13w. Rig.

J. E. Trigg and Vernon Oil & Gas Co. No. 1 Andrea, SE cor. sec. 4-23-12w. Sil. 3,693 ft.; T.D. 3,735 ft.; D.&A.

Sumner County

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. Drlg. 4,170 ft.

Olson Drlg. Co. et al No. 1 Barr, SE cor. sec. 8-34-2w. Drlg. 4,358 ft.

E. B. Shawver et al No. 1 Bryan, C W½ W½ SW sec. 36-30-2w. Chat 3,747-48½ ft.; set 7-in.

Texas Co. No. 1 Harper, NE SW SE sec. 9-20-3w. Stalnaker 3,018 ft.; cg. 3,020 ft.

Woodson County

Harper et al No. 1 Miller, NW NE SE sec. 10-24-14. Spudded.

Kansas O. & G. Corp. No. 1 Providence, SW SW SE sec. 6-24-15. Drlg. 500 ft.

Reamer No. 1 Corn, NE cor. sec. 31-26-15. T.D. 1,825 ft.; D.&A.

Reed et al No. 1 Piper, NW NW SE sec. 19-23-15. Lime, 1,535 ft.; T.D. 1,537 ft.; W.O..C

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. T.D. 1,293 ft.; S.D.

Seminole County

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Reed, SE SW SE sec. 19-10-8. T.D. 165 ft.; running csg.

J. E. Hall et al No. 1 White, SE NW SE sec. 30-6-8. T.D. 2,610 ft.; P.B. 1,275 ft.; shot; swb. 40 B.O. and 30 bbls. mud in 24 hrs.; C.O.

J. H. Hudson et al No. 1 Tanyan, SE SE SW sec. 32-10-7. First Wilcox 4,630 ft.; T.D. 4,632½ ft., wtr.; S.D.O.

Ross Oil Co. No. 1-A Johnson, NE NE SW sec. 24-10-7. T.D. 3,567 ft.; D.&A.

Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW sec. 28-10-8. Viola 4,123 ft.; T.D. 4,164 ft.; bailing.

Texas County

Cabot Carbon Co. No. 1 Castro, C SE sec. 19-3n-17ecm. T.D. 2,570 ft.; 3,600,000 ft. gas at 2,690 ft.; to P.B.

Missouri Valley Gas Corp. No. 1 well, C sec. 17-6n-14ecm. R.U.R.

Washita County

John Koberg No. 1 Harms, NW NW NE sec. 6-10-16w. Drk.

L. P. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. 1,772 ft.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. T.D. 1,260 ft. (cor.); S.D.

Carter County

Lyle-Wham Dev. Co. No. 1 Jackson, NE SW SW sec. 26-5s-1e. T.D. 881 ft.; S.D.O.

Choctaw County

Cooper & Branstetter No. 1 Bell, C NW NE sec. 29-6s-17. T.D. 1,151 ft. (cor.); temp. abd.

Comanche County

E. B. Hane No. 1 Duper, NW cor. sec. 21-2n-13w. S.D. 250 ft. for csg.

C. V. Morris No. 1 Young, SE NE SE sec. 24-3n-10w. Drlg. 955 ft.

F. F. Stevens No. 1 Green, SE SE SW sec. 2-1n-13w. O.W.D.D. Abd. at 1,893 ft.

Jefferson County

Buffalo Oil Co. No. 1 Crownover, SE SE NW sec. 21-6s-6w. Wtr. sd. 2,230-88 ft.; L. 2,335-36 ft., T.D.; U.R.

Dodson, Wells-Pierson No. 1 Key, SE SE NW sec. 6-8s-6w. T.D. 3,183 ft.; S.D.

Gulf Oil Corp. No. 1 Woodworth, NW NW NE sec. 20-3s-4w. R.U.R.

Heenan & Coe et al No. 1 Rose, C SW SW sec. 1-5s-5w. Drk.

Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. T.D. 1,538 ft.; S.D. for repairs.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. T.D. 1,155 ft.; S.D.

Love County

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft.; P.B. 6,927 ft.; fsg. for tubg. at 5,288 ft.

Marshall County

Stuart & Taylor No. 1 Chestnut, NE cor. sec. 23-8s-5e. T.D. 803 ft.; P. 100 bbls. fluid, est. 50 per cent wtr.; pulling tubing and rods.

Murray County

Power Oil Co. et al No. 1 Lancaster Trust, C SW NE sec. 10-1s-2e. T.D. 3,438 ft.; P.B. to 3,175 ft.; W.O.C.

J. Ben Russell No. 1 fee, SE SE NW SE sec. 9-2s-3e. Drlg. 1,465 ft.

Stephens County

William Angle No. 1 Posey, C NW NW sec. 8-1n-8w. Cored from 5,142 ft.; odor of oil, 5,393-5,410 ft.; drlg. ahead.

Carter Oil Co. No. 1 Harley, C NE NE sec. 24-2s-4w. Dol. 4,321 ft.; drlg. 4,347 ft.

H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. T.D. 2,754 ft.; drilled plug; water; may recement.

Helmerich & Payne No. 1 Graham, SW SW NE sec. 12-1n-5w. T.D. 5,014 ft.; contract depth; blew in as gasser.

B. F. Lundy No. 1 Calmes, NW SW SE sec. 35-1n-4w. Drlg. 3,020 ft. in lime.

Charles Newsom No. 1 Pfile, SW cor. sec. 1-2s-7w. Spudded.

Tillman County

D. S. Smith No. 1-A Hamil, NE NW NW sec. 6-5s-15w. T.D. 2,425 ft.; S.D.

OKLAHOMA

Week ending April 10

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. T.D. 975 ft.; S.D.

Caddo County

Clyde Becker et al No. 1 Pharris, SE SE NW sec. 24-6-12w. Tools on ground.

Cleveland County

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Drlg. 3,088 ft.

Coal County

Ruwoldt & Couch No. 1 McMillan, SW cor. sec. 10-1s-8. T.D. 1,414 ft.; D.&A.

Creek County

J. E. Crosbie, Inc. & Sinclair Prairie Oil Co. No. 1 Bailey, NE NW NW sec. 28-15-7. T.D. 3,808 ft.; D.&A.

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. S.D. 2,935 ft.

Comail Oil Co. et al No. 1 Hall, SW SW NE sec. 2-15-7. Miss. 3,455 ft.; drlg. 3,670 ft.

Garfield County

Arab Oil Co. No. 1 Harkendorf, NE cor. sec. 34-20-3w. Layton 4,520 ft.; Osw. 5,070 ft.; Miss. 5,355 ft.; drlg. 5,440 ft.

Ohio Oil Co. No. 1 State, SW cor. sec. 13-23-3w. R.U.R.

Grady County

Western White Lily Oil Co. No. 1 Stover, SE SW NW sec. 33-3n-7w. Drlg. 2,053 ft.

Haskell County

Continental Oil Co. No. 1 Anderson, SW SE NE sec. 33-8-20. Rig.

Harmon County

Penn State Oil Co. No. 1 Cole, C W½ SW NW sec. 21-2n-26w. Drlg. 2,380 ft.

Hughes County

Mid-Western Prod. Co. No. 1 Hill C SE NW sec. 13-9-9. 22,000,000 ft. gas at 2,884 ft.; dry sand, 2,890-2,904 ft.; T.D. 2,942 ft.; comp.

C. J. Wrightsman No. 1-A Diamond, NE NE SE sec. 33-9-9. First Wilcox 4,246-58 ft., S.S.O.; 2nd Wilcox 4,279½-80 ft.; T.D.; testing.

Kay County

Fortuna Oil Co. No. 1-A Harris, SW SW NE sec. 14-25-1e. S.D. at 383 ft.

Kiowa County

Argus Pet. Co. No. 1 Osborne, NW cor. NE sec. 9-7-16w. T.D. 1,225 ft.; S.D.

Kiowa Oil Corp. No. 1 Finder, C SW NE sec. 4-6-20w. Spudded.

Latimer County

Clark Drlg. Co. et al No. 1 Wilson, C SE SE sec. 15-5-18. Drlg. 4,028 ft.

Le Flore County

Lynch et al No. 1 Tidwell, C NW SE sec. 17-3n-22. Set 8-in. 2,340 ft.; to deepen.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. C.O. 4,975 ft.

Eason Oil Co. et al No. 1 Sisters, SW cor. sec. 24-17-1w. R.U.R.

Helmerich & Payne et al No. 1 Randall, SW SW NW sec. 24-16-1w. R.U.R.

Helmerich & Payne et al No. 1 Ruck, C NE SE sec. 9-19-2w. Osw. 4,760 ft.; S.S.O. 4,760 ft.; Miss. 5,105 ft.; drlg. 5,144 ft.

Murray County

O. O. Owen No. 1 Fryer, NE SE NE sec. 34-1s-3e. Drk.

Noble County

Lincoln Oil Co. et al No. 1-A Nell, NE cor. sec. 15-23-2w. Drlg. 3,560 ft.

Okfuskee County

Mid-Continent Pet. Corp. No. 1 Gofford, NE NE NW sec. 35-12-7e. Drlg. 3,220 ft.

Osage County

Bay Oil Corp. No. 1 Osage, NW cor. sec. 35-24-7. Drlg. 1,580 ft.

Norbla Oil Co. No. 1 Osage, NE NE SW sec. 13-23-6. T.D. 760 ft.; skidded rig 25 ft. south.

Payne County

Bill Riddle No. 1 Van Zandt, NW NW SE sec. 16-18-3e. Cellar and pits.

Pontotoc County

E. H. Moore et al No. 1 Muse, SW NE SE sec. 33-2n-7. T.D. 5,253 ft.; P.B. to 4,570 ft.; acd.; flwd. 73 B.O. in 24 hrs.

Pottawatomie County

Champlin Ref. Co. No. 1 Buckler, SE NE NE sec. 7-6-4e. Fault zone 4,405 ft.; Syl. 4,424 ft.; Viola 4,526 ft.; S.O. 4,565 ft.; Dense 4,575 ft.; Dol. 4,620 ft.; drlg. 4,700 ft.

Mid-Continent Pet. Corp. No. 1-A Logan, NE NE SE sec. 31-11-5. Mayes 4,420 ft.; drlg. 4,525 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Drillers, Inc., No. 1 Glassell-Means, SW NE SE sec. 9-23-15. Drlg. 2,888 ft.

Gulf Oil No. 1 Campbell, C sec. 4-23-16. Drlg. 5,320 ft.

J. Edw. Jones No. 2-B Sharp, NW C sec. 4-23-16. Drlg. 5,157 ft.

J. Edw. Jones No. 4-A Sharp, SE C sec. 4-23-16. Drlg. 4,995 ft.

Lion Oil Rfg. No. 1 Holm, NW SE SE sec. 9-23-15. Drlg. 5,580 ft.

Lyons & Neely No. 1 Noel, SE cor. sec. 8-23-15. T.D. 6,086 ft.; P.B.

Lyons & Neely No. 2 Noel, SW SE SE sec. 8-23-15. 7-in. cmt. 5,881 ft.; T.D. 5,930 ft.; W.O.C.S.

Magnolia Pet. Co. No. 11-A Caddy Lvy. Bd., SW cor. sec. 21-23-16. Drlg. 5,548 ft.

Marr et al No. 5 Hunter, sec. 13-23-16. O.W.D.D.; drlg. 6,805 ft.

R. W. Norton No. 2 L. C. Harden, 585 ft. E. 656 ft. N. SW cor. 56-ac. tr., sec. 20-23-16. Drlg. 3,567 ft.

R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Cg. 8,930 ft.

R. W. Norton No. 4 Starke, 1,980 ft. N, 660 ft. E. SW sec. 16-23-16. Drlg. 4,531 ft.

Standard Oil of La. No. 2 Armistead Comm., SE SE SW sec. 4-23-16. T.D. 6,039 ft.; tstg.

Standard Oil Co. No. 1 L. J. Kaempfer, SE sec. 9-23-16. Drlg. 2,067 ft.

Standard Oil Co. No. 1 Sarah Kaempfer, NW NW NE sec. 9-23-16. Drlg. 2,088 ft.

Standard No. 1 W. M. Terry, SE NE SW sec. 9-23-16. Drlg. 5,380 ft.

United Gas No. 6 fee 574, SW NE NW sec. 16-23-16. Loc.

United Gas No. 1 A. B. Land Unit, NW sec. 32-23-16. Drlg. 2,060 ft.

United Gas No. 1 Starke, SE SW sec. 9-23-16. Drlg. 3,100 ft.

United Gas No. 5 Young, NW sec. 27-23-16. Cg. 6,388 ft.

N. LOUISIANA WILDCATS

Bienville Parish

DeSoto O. & G. Co. No. 1 Ashley, SW SE sec. 15-16-10w. Loc.

Lide & Greer No. 1 W. J. Smelley, SE NW SW sec. 18-16-4w. Drlg. 1,920 ft.

McDowell et al No. 1 Locke, NE cor. sec. 9-15-10. S.D. 2,568 ft. (cor.).

Bossier Parish

Arkansas-La No. 2-B Werner, NE cor. sec. 7-17-11. Loc.

Arkansas-La. No. 1 Tom Wilson, SW sec. 8-17-11. Cg. 4,260 ft.

Haynes Drlg. Co. No. 1 A. J. Murff, NE SE sec. 35-17-12. Cg. 5,884 ft.

Producers O. & G. Co. No. 1 Hill Est., E½ NE¼ sec. 8-17-11. R.U.

Producers O. & G. No. 1 R. Johnson, NE sec. 5-17-11. R.U.

Tidwell et al No. 1 Natting, sec. 15-22-14. T.D. 2,954 ft.; S.D.

Triangle No. 2 Ross Unit, NW SW NW sec. 23-17-12. T.D. 5,180 ft.; tstg.

Triangle Drlg. Co. No. 2-A State, SW cor. sec. 23-17-12. 9-in. cmt. 2,600 ft.; W.O.C.S.

United Gas No. 1 Henderson, NE cor. sec. 36-17-12. Cg. 5,613 ft.

United Gas No. 1-I Skannal, SW SW sec. 25-17-12. 7-in. cmt. 5,163 ft.; T.D. 5,175 ft.

United No. 1-A Webb, C sec. 23-17-12. Drlg. 5,472 ft. (cor.).

Caddo Parish

Bayou State No. 1 Stiles, NE NE SW sec. 22-22-15. Cmtd. 6-in. 1,005 ft.; W.O.C.S.

E. L. Butt and Sam Hill No. 1 Caddo Lvy. Bd., C sec. 8-20-16. T.D. 962 ft.; D.&A.

Calatex O. & G. No. 3-A Agurs, SW. cor. sec. 6-16-6. Drk.

W. D. Chew No. 3 Rives, NE sec. 5-20-16. T.D. 946 ft.; W.O.S.R.

W. D. Chew No. 4 U. S. Govn., NW sec. 5-20-16. 9-in. cmt. 939 ft.; W.O.C.S.

C. C. Chew No. 3 Pender, NW NW SW sec. 11-20-15. Cmtd. 6-in. 2,163 ft.; T.D. 2,202 ft. (cor.).

Paul Cooper No. 2 Rodgers, NW SW SW sec. 11-20-15. Drk.

Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. S.D. 1,650 ft.; rig rep.

D. K. O. Oil Corp. No. 1 Player, SE NW SE sec. 26-21-15. Drlg. 1,475 ft.

D. K. O. Oil Corp. No. 1 Tyson, SE NE sec. 17-21-15. 10-in. cmtd. 100 ft.

DeMaggo et al No. 1 Huckaby, SE NE SE sec. 26-22-16. P.B. to 1,400 ft.; W.O.C.S.

G.R.C. Oil Co. No. 5 Herndon, NE SE NW sec. 22-21-15. 10-in. cmt. 87 ft.

Gulf Ref. Co. No. 1 E. P. Hatcher, 660 ft. N and E. SW cor. SE¼ sec. 11-17-15. T.D. 9,244 ft.; D.&A.

LEGAL

U. S. Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that Unit No. 1 embracing SW¼ SW¼ Sec. 4, T. 23 N., R. 15 W., 40 acres, and Unit No. 2, embracing NW¼ SW¼, S½ SW¼, SW¼ SE¼, Sec. 6, T. 23 N., R. 15 W., 113.38 acres, in the Rodessa Oil and Gas Field, Caddo Parish, Louisiana, are offered to the responsible qualified bidder of the highest bonus per acre, the minimum bid being $1 per acre, under section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 12:00 noon, on April 23, 1937. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease required by section 7 of General Land Office Circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. (Signed) Fred W. Johnson, Commissioner.

W. J. Hunter et al No. 1 Stoer, NW SW NE sec. 10-15-15. Drlg. 1,380 ft.
J. B. Hutchinson No. 2 Storey-Phillips, SW NE NW sec. 28-16-13. T.D. 2,700 ft.; D.&A.
F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. 6-in. cmtd. 2,174 ft.; T.D. 2,203 ft.; prep. to test.
H. E. Philp No. 1 Fuller, NE cor. sec. 26-22-15. T.D. 1,034 ft.; W.O.
W. L. Porter No. 1 Terbune, sec. 15-21-16. Drk.
Prairie River Synd. No. 1 Hutchinson, SW NW sec. 15-15-12. Drlg. 7,385 ft.
Robson Oil Properties, Inc., No. 1 Cupples, NE sec. 24-16-13 (formerly Falcon Oil Co.). Cg. 5,655 ft.
Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. P.B. to 2,204 ft.; W. O.C.S.
P. A. Singlust No. 2 Starr-Brown, SE sec. 28-20-16. Cg. S.W. sd.; T.D. 1,820 ft.; W.O.
Stanolind O. & G. No. 120 Dillon, SE NE sec. 14-21-15. T.D. 1,665 ft.; comp.; flw. 150 B.P.D.
Stanolind O. & G. Co. No. 121 Dillon, NE SE sec. 14-21-15. Drk.
Stanolind O. & G. Co. No. 122 Dillon, NW sec. 13-21-15. Loc.
Stanolind O. & G. No. 11 J. B. Slattery, NE NW sec. 27-21-15. R.U.
J. J. Thompson No. 1 Gamm, NE SW NW sec. 35-21-15. Tstg. S.W.; S.D.; T.D. 2,225 ft.

Claiborne Parish

Gulf Ref. No. 1 Eva Bennett, SW sec. 31-21-4. Drlg. 2,249 ft.
Gulf Ref. No. 1 H. E. Patton, SE sec. 36-21-5. Drlg. 2,700 ft.
Gulf Ref. No. 2 H. E. Patton, 1,650 ft. N and W, SE cor. sec. 36-21-5. Drlg. 2,340 ft.
Gulf Ref. No. 3 H. E. Patton, SW NE SW sec. 36-21-5. Drlg. 800 ft.
Gulf Ref. No. 4 H. E. Patton, NW NE SW sec. 36-21-5. Drlg. 100 ft.
T. L. James No. 1 Patton Est., C N½ NE SE sec. 36-21-5. Drlg. 50 ft.
T. L. James No. 2 Patton Est., SW NE SW sec. 36-21-5. M.I.M.
Lisbon Oil Co. No. 1 J. W. Burgess, NE SE NE sec. 3-20-5. T.D. 5,800 ft.; D.&A.
Love Pet. Co. No. 1 H. E. Patton, SE SW SE sec. 36-21-5. Drlg. 2,100 ft.
Love Pet. Co. No. 3 H. E. Patton, NE SW SE sec. 36-21-5. Drlg. 420 ft.
Lyons & Neely No. 1 Maggie Patton, C W½ NW SW sec. 31-21-4. Drlg. 860 ft.
McMillan et al No. 1-A Maggie Patton, S½ NE SW sec. 31-24-4. R.U.
L. O. McMillan No. 1 H. E. Patton, S½ SW NW sec. 36-21-5. Drk.
Ray P. Oden No. 2 H. W. Patton, NW SE SE sec. 36-21-5. R.U.
Red Iron Drlg. Co. No. 1 H. E. Patton, S½ SW NE sec. 36-21-5w. Comp.; flw. 20 B.P.H.; T.D. 5368 ft.
Shreveport Oil Corp. No. 1 Edwards, NE sec. 16-20-5w. Loc.
Standard Oil of La. No. 1 Baker, 660 S&E NW sec. 27-19n-7w. Cg. 5,768 ft.
J. C. Tippett No. 1 H. E. Patton, 330 ft. N and E, SW SE sec. 36-21-5. Loc.
United Gas et al No. 1 W. Brown, sec. 1-19-6. T.D. 5,984 ft.; flw. 190 B.P.D.; W.O.
United Gas No. 1 W. M. Dobbins, sec. 12-19-6w. O.W.D.D.; old T.D. 4,368 ft.; drlg. 4,498 ft.
P. W. Woodruff No. 2 H. E. Patton, C N½ SW NE sec. 31-24-4. R.U.

De Soto Parish

Benedum & Trees No. 1 Clifton, NE NW sec. 33-13-12. Drlg. 4,436 ft.
Rio Rajo Oil Co. No. 7 Prudhomme, SE cor. sec. 20-12-11. T.D. 2,716 ft.; tstg.; 2,000,000 ft. gas; S.D.; W.O.
Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. S.D. 2,503 ft.; fuel.
R. M. Sundby No. 1 A. P. Garland, NW SW sec. 7-14-14. T.D. 5,548 ft.; W.O.

Franklin Parish

S. C. Jensen No. 1 Dailey, sec. 12-11-6. T.D. 2,285 ft.; D.&A.

Grant Parish

Grantland Prod. Co. No. 2 Swope-Labrat, NE SW SE sec. 18-9-1e. Drlg. 1,600 ft.
H. M. S. Corp. No. 1 McNeely, sec. 21-6n-3w. 20-in. csg. 20 ft.
Harvey Weir No. 1 Calfax Bk. & Tr. Co., NE NW sec. 15-7n-3w. Loc.
Tri State Lse. & Dev. Co. No. 1 Edenborn Est., NE SE SE sec. 13-7-4w. T.D. 3,000 ft.; S.D.

Jackson Parish

G. W. Zeigen No. 5 La. Cen. Lbr. Co., sec. 13-14-2w. Drlg. 3,150 ft.

Lincoln Parish

E. T. Oakes-H. D. Easton and Evans No. 1 R. L. Sanderson, NW SE NW sec. 36-18-1w. Drk.

Morehouse Parish

So. Carbon Co. No. 3 Miles, NE sec. 36-21-4e. T.D. 2,390 ft.; tstg.

Ouachita Parish

H. L. Woods No. 1 Union, NE sec. 17-19-3e. R.U.
H. L. Woods No. 2 Union Power, SE sec. 17-19-3e. T.D. 2,297 ft.; W.O.
United Gas No. 2 Morris, SE sec. 36-19-3e. Loc.
United Carbon No. 7 Neston, NE cor. sec. 32-19-4e. Cmt. 6-in. 2,187 ft.; W.O.C.S.

Red River Parish

Gulf No. 26 Kennedy, NW sec. 24-13-11. 6-in. cmtd. 2,490 ft.
Gulf No. 39 E. T. Robinson, NW cor. sec. 25-13-11. Comp.; pmp. 43 B.P.D.; T.D. 2,550 ft.
Gulf No. 40 E. T. Robinsons, SW sec. 24-13-11. Drk.
Perla Oil Co. No. 1 DeLong, 330 ft. S and E. C sec. 23-12-10. Fsg. 2,800 ft.
J. D. Wadley No. 1 McClelland, SE NE sec. 24-13-11. R.U.

Richland Parish

Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. T.D. 9,986 ft.; D.&A.

Sabine Parish

Earl F. Fox No. 1 Blankenship, NE SE NW sec. 13-9-12. S.D. sh.; T.D. 3,412 ft.
Kirk-Green-Way Inc. No. 1 Whitney Corp., NW NE sec. 8-9-13. Drlg. 4,675 ft.
Prod. O. & G. Co. No. 1 Lynch, SW NE SW sec 29-9-13. Pumped off; acid; T.D. 1,608 ft.
W. G. Ray Drlg. Co. No. 3 Looney, NW SE NE sec. 30-9-13. 6-in. cmtd. 1,605 ft.; T.D. 1,623 ft.
A. C. Scott No. 1 Bowman-Hicks Lbr. Co., sec. 23-9-13. O.W.D.D.; T.D. 2,616 ft.; S.D.
Willis & Dowden No. 1 Lynch, SW NE SW sec. 29-9-13. T.D. 1,608 ft.; arg. tst.

Tensas Parish

H. M. Jones et al No. 1 Chicago Mill & Lbr. Co., NE sec. 30-12n-10e. T.D. 798 ft.; blew out after stng. 8 mo.; gauging 30,000,000 ft. gas and 10,000 bbls. wtr.; S.D.; W.O.

Union Parish

Interstate Nat. Gas Co. No. 63 fee, SE sec. 3-21-3e. Cmtd. 6-in. 2,099 ft.
So. Carbon Co. No. 17 Grayling, SW cor. sec. 21-21-4e. R.U.
So. Carbon No. 18 Grayling, SE cor. sec. 20-21-4e. Loc.
H. L. Woods No. 2-B Frost Lbr., NW sec. 16-21-3e. Loc.
H. L. Woods No. 3-B Frost Lbr. Co., SE SW sec. 10-21-3e. Loc.

Webster Parish

W. H. Bass Drlg. Co. No. 1 T. Crichton, C NW NW sec. 21-20-9. Drlg. 450 ft.
Magnolia No. 2 D. G. Cox, SW SE NE sec. 22-21-10. Fsg. 4,177 ft.
Ohio Oil Co. No. 1 S. P. D. Coyle, NW SE SW sec. 23-21-10. Drlg. 6,630 ft.
Ohio Oil Co. No 2 R. M. Coyle, SE sec. 22-21-10. 9-in. cmtd. 5,598 ft.
Ohio No. 1 S. P. D. Coyle and W. Cox, SW SW SE sec. 23-21-10. Drk.
Ohio Oil No. 1 T. Crichton, Acct. No. 2, SE NE sec. 21-21-10. Drk.
Ohio Oil No. 1 L. M. Gardner, NE sec. 22-21-10. Drk.
Ohio Oil Co. No. 2 A. H. Gray Acct. No. 2, NW sec. 26-21-10. Drlg. 6,949 ft.
Ohio Oil Co. No. 2 A. J. Hodges, NE NW SW sec. 23-21-10. Drlg. 7,098 ft.
Ohio No. 7-B R. L. Holloway, 586 ft. N, 756 ft. E line, sec. 23-21-10. Drk.
L. R. Skidmore No. 1 Barnett, NE NW SW sec. 29-17-9. Drlg. 3,285 ft.
Standard Oil Co. of La. No. 1 E. Firdecker, 1,320 ft. E, 1,316 ft. S, SW cor. sec. 2-17n-9w. Retested and showed 15,000,000 ft. gas; prep. reperforate; T.D. 7,202 ft.
Standard Oil of La. No. 1 E. L. Stewart, SE SE SE sec. 32-21-10. Loc.
United Gas No. 2 Davis, 660 ft. S and E. NW cor. sec. 23-21-10. P.B. 8,551 ft. to 8,305 ft.; perf. and tstg.
United Gas No. 1 Mixon, SE SW sec. 22-21-10. T.D. 8,231 ft.; reperf. and tstg.
Woodley Pet. Co. No. 4-B Gray, NE NE sec. 27-21-10. Drlg. 6,903 ft.

LEGAL

Department of the Interior, U. S. Land Office, Las Cruces, New Mexico. Notice is hereby given that the W½ W½ Sec. 24, W½ NW¼, SE¼ NW¼ Sec. 25, T. 26 S., R. 36 E., N.M.P.M., 280 acres, in the Eaves oil and gas field, New Mexico, is offered to the responsible qualified bidder of the highest bonus per acre for lease under Section 17 of the act of February 25, 1920 (41 Stat., 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at 10 o'Clock, A.M., May 18, 1937. The minimum bid which will be accepted is $1.00 per acre. The land will be offered as a single unit. The successful bidder must deposit on the date of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount and file the showing of qualifications to receive a lease required by Section 7 of Circular 1386. The remainder of the bonus bid and the annual rental at the rate of $1.00 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

SOUTH LOUISIANA FIELDS

Ansela Butte—St. Martin Parish

Y. D. Spell No. 3 Begnaud, sec. 117-9s-5e. Drk.
Stanolind O. & G. Co. No. 2 Paton, sec. 46-9s-5e. Loc.

Bayou Cocotriz—Terrebonne Parish

Shell Pet. Corp. No. 1 Pelican, sec. 35-17s-15e. Drlg. clay 178 ft.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 37 Watkins, sec. 8-12s-12w. Drlg. sh. 2,620 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 3 State, sec. 19-23s-20e. Drlg. sdy. sh. 4,610 ft.
Texas Co. No. 40 State, sec. 78-23s-20e. T.D. 4,916 ft.; 7⅝-in. csg. 4,863 ft.; I.P. 1,156 B.P.D.; ¼-in. ck.
Texas Co. No. 47 State, sec. 18-23s-20e. S.D. 4,529 ft.; salt.

Cankton—St. Landry Parish

Superior Oil Prod. Co. No. 1 Brasseaux, sec. 24-8s-3w. Drlg. sd. 8,584 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 3 Laws Realty Co., sec. 25-12s-9e. Drlg. sdy. sh. 7,250 ft.
Pan American Ref. Co. No. 4 Laws Realty Co., sec. 30-13s-10e. Drk.
Pan American Prod. Co. No. 1 South Coast Corp., sec. 30-13s-10e. S.D. 6,934 ft.; high wtr.

Choctaw—Iberville Parish

Standard Oil Co. No. 9 Myrtle Grove, sec. 53-9s-11e. T.D. 3,455 ft.; P.B. 3,160 ft.; to sdtrk.; drlg. sdy. sh. 5,620 ft.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 16 Sch. Ld., sec. 16-14s-13w. Set 10¾-in. csg.; T.D. 4,851 ft.; P.B. 3,650 ft.; T.D. 4,245 ft.; completed for gas well.
Burton Sutton Oil Co. No. 18 School Ld., sec. 16-14s-13w. Drk.
Magnolia Pet. Co. No. 19 Cameron Meadows, sec. 16-14s-13w. T.D. 4,714 ft.; recvrd. 2,500 ft. of P.L.O. on D.S.T.; 9⅝-in. csg. 4,694 ft.; P.B. 4,708 ft.; blew out, caught fire; bridged; R.U.; 7-in. csg. 4,696 ft.; fsg.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-2e. Abd. 7,980 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 8 State. Abd. 9,526 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 23 State, sec. 37-23s-33e. 18⅝-in. csg. 541 ft.; top salt 5,933 ft.; T.D. 5,965 ft.; P.B. and sdtrkd.; drlg. sh. 5,632 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 First Natl. Bank, sec. 13-9s-8w. Drlg. sh. 6,890 ft.
Texas Co. No. 12 Nickerson, sec. 1-9s-8w. T.D. 6,718 ft.; rmg.
Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. T.D. 9,101 ft.; blew out; caught fire; cratered; cleaning up after blowout; S.D.
Union Sulphur Co. No. 14 Barbe, sec. 1-9s-8w. Drlg. sh. and L. 6,350 ft.
Union Sulphur Co. No. 7 Castle, sec. 14-9s-8w. Drlg. sdy. sh. 5,583 ft.
Union Sulphur Co. No. 4 Kaufman, sec. 12-9s-8w. Loc.
Union Sulphur Co. No 12 Powell Lbr. Co., sec. 12-9s-8w. 10¾-in. csg. 1,601 ft.; drlg. sh. 4,217 ft.

Hackberry—Cameron Parish

W. T. Burton No. 1 Kennedy, sec. 22-12s-10w. R.U.
W. T. Burton No. 1 J. J. Roboria, sec. 11-9s-2w. R.U.
W. T. Burton No. 1 Rosella Vincent, sec. 22-12s-10w. T.D. 4,351 ft.; 7-in. csg. 4,297 ft.; I.P. 7½ B.P.H.; ¼-in. ck.
Gulf Oil Corp. No. 23 Erwin, sec. 12-12s-10w. Drlg. sh. and L. 5,297 ft.
Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. T.D. 1,775 ft.; 5-in. csg. 1,775 ft.; swbd. S.W.; S.D.
Stanolind O. & G. Co. No. 1 J. H. Duhon, sec. 27-12s-10w. Old T.D. 4,627 ft.; drlg. sdtrkd. hole in sh. 3,812 ft.
Stanolind O. & G. Co. No. 25-B Gulf Land fee, sec. 15-12s-10w. 20-in. csg. 158 ft.; sd. and L. 4,181 ft.
Stanolind O. & G. Co. No. 1 Little, sec. 28-12s-10w. Run 109 ft. 16-in. csg.
Stanolind O. & G. Co. No. 18 School Land, sec. 16-12s-10w. T.D. 5,996 ft.; P.B. and sdtrkd.; drlg. sh. 5,198 ft.
Stanolind O. & G. Co. No. 52 State, sec. 22-12s-10w. Loc.
Sutton Joint Interest No. 1 Ellender, sec. 22-12s-10w. 7-in. csg. 4,853 ft.; W.O.C.
Texas Co. No. 21 State, sec. 12-12s-9w. 10¾-in. csg. 2,126 ft.; drlg. sh. and L. 5,270 ft.

Iowa—Jefferson Davis Parish

Shell Pet. Corp. No. 23 Heyd, sec. 13-9s-7w. Drlg. sh. 3,962 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Banta, sec. 40-13s-9e. R.U.
Herton Oil Co. No. 2 Barrilleaux, sec. 59-13s-8e. T.D. 6,670 ft.; 7-in. csg. 6,650 ft. I.P. 550 B.P.D.; ¼-in. ck.
Herton Oil Co. No. 6 Carter, sec. 38-13s-9e. Drk.
Teche Oil Co. No. 1 LeBourgeois, sec. 59-13s-8e. 10-in. csg. 1,400 ft.; drlg. sh. 6,130 ft.

Jennings—Acadia Parish

W. T. Burton No. 1 Robira, sec. 41-9s-2w. Drlg. sh. 1,830 ft.
A. C. Glassell et al No. 1 J. Trusel, sec. 42-9s-2w. T.D. 7,015 ft.; cleaning into pits through 14/64-in. ck.; T.P. 1,300 lbs.; C.P. 250 lbs.
Lake City Oil Co. No. 2 Jennings Synd., sec. 46-9s-2w. T.D. 3,990 ft.; D.S. stuck 3,700 ft.; cutting.
T. C. Markly No. 1 Gourney, sec. 42-9s-2w. Old T.D. 4,280 ft.; skidded drk.; S.D.; salt, 4,758 ft.
S. Rhoden et al No. 1 Iowa-Jennings, sec. 45-9s-2w. Drlg. sh. 3,469 ft.
Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. T.D. 7,185 ft.; 7-in. csg. 7,181 ft.; T.D. 7,735 ft.; 5-in. csg. 7,385 ft.; P.B. 7,360 ft.; flwg. 1 bbl. of dist. per hr. through 15/64-in. ck.
Stanolind O. & G. Co. No. 18 Houssiere-Latrielle, sec. 47-9s-2w. 8⅝-in. csg. 5,358 ft.; drlg. sh. 6,696 ft.
Superior Oil Prod. Co. No. 2 Eunice-Crowley, sec. 12-9s-2w. Drlg. L. 3,585 ft.
Superior Oil Prod. Co. No. 2 Jennings-Heywood, sec. 41-9s-2w. 11¾-in. csg. 1,465 ft.; drlg. sdy. sh. 5,251 ft.
Superior Oil Prod. Co. No. 3 Jennings, sec. 42-9s-2w. Drlg. sd. and sh. 304 ft.
Superior Oil Prod. Co. No. 2 Leckcit, sec. 42-9s-2w. 7-in. csg. 7,041 ft.; top salt 7,600 ft.; drlg. salt 7,887 ft.
Superior Oil Prod. Co. No. 3 Wm. Leckert, Drlg. sd. and clay 1,046 ft.

Lafitte—Jefferson Parish

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. T.D. 1,771 ft.; lost returns; moved drlg. barge 135 ft. N of first hole; drlg. sdy. sh. 9,838 ft.
Texas Co. No. 1 State-Bayou Norman, sec. 28-17s-24e. Drlg. sh. and L. 4,748 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre-State, T.D. 10,959 ft.; D.S. stuck; shot at 8,113 ft.; cutting and pulling.

Lake Pelto—Terrebonne Parish

Texas Co. No. 15 State, sec. 17-23s-18e. Drlg. sdy. sh. 5,624 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6 Lafourche, sec. 11-8s-25e. T.D. 6,390 ft.; tstd. S.W.; drlg. deeper.

Leesville—Lafourche Parish

Gulf Oil Corp. No. 1-A City of New Orleans, sec. 35-21s-22e. T.D. 5,831 ft.; sdtrkd. 4,831 ft.; drlg. sh. and L. 5,412 ft.
Texas Co. No. 59 L.L.&E., sec. 27-21s-27e. Drlg. sd. and sh. 4,301 ft.
Texas Co. No. 62 Leesville, sec. 29-17s-24e. T.D. 4,015 ft.; 7⅝-in. csg. 4,008 ft.; I.P. 482 B.P.D.; ¼-in. ck.

Lockport—Cameron Parish

Magnolia Pet. Co. No. 6 Freeberg, sec. 9-10s-9w. Sh. 2,643 ft.

New Iberia—Iberia Parish

Wm. Hellis No. 7 Bernard, sec. 54-12s-7e. T.D. 4,760 ft.; 7-in. csg. 4,694 ft.; I.P. 50 B.P.H.; ⅜-in. ck.
Wm. Hellis No. 4 Bullock & Burke, sec. 25-12s-7e. T.D. 4,505 ft.; P.B. and sdtrk.; T.D. 4,401 ft.; P.B. and sdtrkd.; T.D. 4,548 ft.; 7-in. csg. 3,722 ft.; pulling screen.
Wm. Hellis No. 3 Schwing, sec. 57-12s-7e. Drlg. sh. 4,116 ft.
Texas Co. No. 2 Duhe, sec. 26-12s-7e. Drlg. sh. 3,082 ft.
Texas Co. No. 3 Bryant, sec. 25-12s-7e. R.U.
Texas Co. No. 5-B Hanzen, sec. 54-12s-7e. Drlg. sdy. sh. 2,578 ft.

Roanoke—Jefferson Davis Parish

Humble O. & R. Co. No. 8-B Devilbiss, sec. 11-9s-4w. Drlg. 175 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-19s-14e. S.D. 6,262 ft.
Tri-State Dev. Co. No. 1 Duplessis, sec. 69-10s-2e. Drk.

South Jennings—Jeff Davis Parish

Stanolind-Amerada Pet. Corp. No. 2 Calcasieu Natl. Bank, sec. 10-10s-3w. Loc.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co. sec. 20-9s-12w. S.D. 6,433 ft.

St. Martinsville—St. Martin Parish

Tide Water Oil Co. No. 3 Smedes, sec. 57-11s-6e. R.U.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 840 fee, sec. 29-9s-10w. T.D. 3,740 ft.; P.B. 3,316 ft.; failed to flow.
Union Sulphur Co. No. 842 fee, sec. 29-9s-10w. T.D. 5,475 ft.; P.B. and sdtrkd.; drlg. rock 5,012 ft.
Union Sulphur Co. No. 844 fee, sec. 29-9s-10w. Drlg. sh. and L. 2,876 ft.

Tepetate—Acadia Parish

Continental Oil Co. No. 2-D Homeseekers Dev. Co., sec. 29-7s-2w. Drlg. sh. 1,531 ft.
Continental Oil Co. No. 7-A L. L. Welch, sec. 28-7s-2w. Drlg. sh. 7,435 ft.
Continental Oil Co. No. 4 P. W. Miller, sec. 28-7s-2w. Drk.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 2-A Harang, sec. 9-17s-20e. 10¾-in. csg. 1,508 ft.; T.D. 5,390 ft.; I.P. 26 B.P.H.; ¼-in. ck.
Pan American Prod. Co. No. 3 Harang, sec. 8-17s-20e. T.D. 7,522 ft.; rmg.
Pan American Prod. Co. No. 4 Harang, sec. 8-17s-20e. Rec. 630 ft. of oil on D. S.T. 5,405-32 ft.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. T.D. 8,903 ft.; P.B. 8,717 ft.; drill sdtrkg. 8,123 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,426 ft.; left 900 ft. of D.S. in hole.
Humble O. & R. Co. No. 1 Nordyke, sec. 23. 9⅝-in. csg. 6,843 ft.; cg. 9,824 ft.

Allen Parish

Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in. csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,766 ft.; shot well; failed to stop flwg. S.W.; S.D.

Avoyelles Parish

Coastal Minerals No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.; S.D.; high wtr.

George Conover No. 1 Purdy-Hess, sec. 36-2n-3e. Drk.
Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

D. D. Oil Co. No. 1 Lutcher Moore, sec. 11-8s-13w. T.D. 8,398 ft.; tried to blow out; hole cleaned; prep. to core ahead.

Cameron Parish

Magnolia Pet. Co. No. 1-A Dobbortine, sec. 9-15s-14w. 8⅝-in. csg. 617 ft.; drlg. sh. 4,497 ft.
Southern Sulphur Co. No. 2 State, sec. 29-15s-10w. Drlg. sh. 2,595 ft.
Union Sulphur Co. No. 1 J. O. Hebert, sec. 18-12s-8w. Drlg. sd. 7,282 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. T.D. 6,690 ft.; D.S. stuck.

Evangeline Parish

Belle Chenney Springs Oil Co. No. 1 Belle Springs Land Dev. Co., sec. 10-2s-1w. T.D. 2,214 ft.; re-R.U.
Continental Oil Co. No. 1 Pardee Lbr. Co., sec. 18-4s-1w. Drlg. sh. 7,130 ft.

East Feliciana Parish

East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. and S.D.

Iberia Parish

Jefferson Lake Oil Co. No. 414 State Lake Pigneur, Twp. 12s-5e. Top salt 990 ft.; set 10¾-in. csg. 5,095 ft.; top oil sd. 6,915 ft.; 7-in. csg. 6,930 ft.; perf. csg. 6,930-40 ft.; jetted with gas; flwd. est. 50 bbls. of net oil and S.W.

Jefferson Parish

Louisiana Crusader Oil Corp. No. 1 Langley, sec. 36-7s-5w. Drlg. sh. 2,175 ft.
Triangle Oil Co. No. 1 Conroe, sec. 125-12s-11e. T.D. 2,461 ft.; drill stem stuck.

Jefferson Davis Parish

Shell Pet. Corp. No. 1 Joe Sturdivant, sec. 25-10s-4w. 10¾-in. csg. 2,616 ft.; 7-in. csg. 8,630 ft.; perf. csg. 8,540-50 ft.; flwd. 2½ bbls. of dist. per hr.; 16/64-in. ck.; T.P. 3,000 lbs.; C.P. 2,750 lbs.
Stanolind O. & G. Co. No. 1 Calcasieu Natl. Bank, sec. 28-7s-3w. T.D. 9,139 ft.; blew out, hole bridged; cutting and pulling stuck D.S.; csg. parted around 1,400 ft.; abd.
Stanolind O. & G. Co. No. 2-B Calcasieu Natl. Bank, sec. 28-7s-3w. Loc.
Stanolind O. & G. Co. No. 1 United Life Accident Co., sec. 16-11s-5w. 13⅜-in. csg. 2,142 ft.; drlg. sdy. sh. 8,781 ft.

Lafourche Parish

Fohs Oil Co. No. 1 State Lake, sec. 65-17s-19e. Drlg. L. and sh. 5,316 ft.
Wm. Hellis No. 1 City of New Orleans, sec. 19-23s-23e. Drlg. sh. 7,393 ft.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25-52s-19. Drlg. sh. 4,111 ft.

Rapides Parish

C. L. Decker No. 1 Lee Lbr. Co., sec. 21-5n-3e. Loc.
R. D. Webb No. 1 A. M. Brasher, sec. 22-4n-2w. Drlg. sd. and sh. 4,495 ft.

St. Bernard Parish

Gulf Oil Corp. No. 1 Lake Lery, sec. 28-14s-14e. Drlg. sh. 5,834 ft.
Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 303 ft.; drlg. sdy. sh. 3,670 ft.

St. Charles Parish

Amerada Pet. Corp. and La. Ld. & Expl. Co. No. 1 State, sec. 13-15s-20e. R.U.

St. Landry Parish

Shell Pet. Corp. No. 1 Boagni, sec. 48-8s-4e. 10¾-in. csg. 2,521 ft.; drlg. sd. 7,318 ft.

St. Martin Parish

Geo. E. Lilly et al No. 1 Martin, sec. 32-9s-7e. R.U.
Texas Co. No. 9 St. Martin, sec. 21-8s-7e 18⅝-in. csg. 106 ft.; top salt 8,848 ft.; T.D. 8,885 ft.
Texas Co. No. 3 State, sec. 14-10s-9e 18-in. csg. 101 ft.; drlg. S.W. sd. 7,092 ft.

St. Mary Parish

Texas Co. No. 1 Horse Shoe Bayou, sec. 40-17s-9e. T.D. 10,975 ft.; 7⅝-in. csg. cmtd. on bottom; drlg. sdy. L. 11,235 ft.
Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. Drlg. sdy. sh. 8,364 ft.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender, sec. 23-19s-19e. 9⅝-in. csg. 8,735 ft.; drlg. sh. 11,454 ft.

West Feliciana Parish

Cavalier Oil Co. No. 1 C. W. Mackie, sec. 59-3s-2w. T.D. 4,529 ft.; abd.

ARKANSAS

Ashley County

Joe Modisette No. 1 Stillions Lbr. Co., C S½ SW NW sec. 18-17-9. Loc.

Clark County

W. M. Martin No. 1 Coke, NW sec. 14-10-20. Drlg. 790 ft.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. Washing to bottom; T.D. 2,382 ft.

Hempstead County

Birdwell et al No. 1 Duckett, SW NW SW sec. 24-13-24. S.D. 600 ft.
Root Pet. Co. No. 1 Lucey E. Drake, SE SE NW sec. 24-14s-24w. T.D. 4,507 ft.; D.&A.
Shephert & Todd et al No. 1 Smith, NW SW SE sec. 11-11-25. T.D. 600 ft.; S.D. fuel.

Lafayette County

Carl B. King Drlg. Co. No. 1 Eben H. Woolcott, NE cor. sec. 36-19-26. Drlg. 5,310 ft.
A. M. Neeley No. 1 Meek, NE NE NW sec. 35-19-25. S.D. 3,345 ft.

Little River County

Joe Strahan No. 1 Dierks, SW SE sec. 21-12-28. Fsg. 2,330 ft.

Miller County

Odell Hinson No. 1 Montana Realty Co., NE NW NW sec. 3-17-28. Fsg. D.S. 2,000 ft.; T.D. 5,235 ft.
E. H. Moore No. 3 Dale, 660 ft. W of No. 7, sec. 24-15-26. Drk.
Nivia Oil Corp. No. 1 M.&P. Bank, NE SE SE sec. 18-15-26. Drlg. 2,350 ft.

Miller County—Rodessa

McClanahan et al No. 1 W. L. Capps, sec. 11-20-28. R.U.

Nevada County

Benedum & Trees No. 7 Grove, NW SW NW sec. 10-14-20. Comp.; gas well; T.D. 1,283 ft.
Benedum & Trees No. 9 Grove, NE NE SW sec. 10-14-20. R.U.; W.O.
Benedum & Trees No. 1 Mary Jackson, NE NW NE sec. 9-14-20. Comp.; pmp. 150 B.P.D.; 350 bbls. S.W.; T.D. 2,134 ft.
Benedum & Trees No. 2 Mary Jackson, SE NE NE sec. 9-14-20. M.I.R.
Benedum & Trees No. 1 A. R. Mitchell, SE SW SE sec. 4-14-20. R.U.
Berry Asphalt No. 1 W. Haynie, NE NE SW sec. 6-14-20. T.D. 1,193 ft.; W.O.S.R.
Berry Asphalt Co. No. 2 J. Haynie, NE SE SW sec. 6-14-20. T.D. 1,239 ft.; cg. oil sd.
Berry Asphalt Co. No. 3 W. Haynie, SE NE SW sec. 6-14-20. T.D. 1,193 ft.; W. O.S.R.
Hall & Briscoe No. 2 Ritchie, NE NW SE sec. 10-14-20. T.D. 2,275 ft.; arg. P.B.
A. M. Lacy No. 1 H. C. Bennett, SW SE sec. 24-14s-22w. Drk.
Walter Lowd No. 1 T. S. Grayson, SW SW SE sec. 12-14-20. T.D. 2,385 ft.; S.D.; W.O.
W. E. Stewart No. 1 Mendenhall, cen. SE NW NE sec. 1-14-20. Cg. 2,309 ft.
Steel & Warmack No. 1 Wm. Haynie, SE SE NW sec. 6-14-21. Comp.; pmp. 40 B.P.D.; T.D. 1,183 ft.
G. H. Vaughn No. 1 Christopher, SW SW SE sec. 3-14-20. Fsg.; T.D. 3,291 ft.

Ouachita County

J. D. Reynolds No. 2 P. C. Grayson, Lot 4, Blk. 10, Stephens Sur., sec. 21-15-19. T.D. 1,508 ft.; T.A.

Saline County

Duncan & Gibbens No. 1 Williams, NW NE sec. 18-3-15. 10-in. cmtd. 104 ft.

Sevier County

C. J. Benkley No. 1 Dierks, SW SE NW sec. 14-10s-29w. S.D. 50 ft.

Union County

Arkansas Southern Oil No. 1 G. G. Simmons, sec. 15-18-13. 10-in. cmtd. 194 ft.
Dietrich et al No. 1 Aaronson, NE SW NE sec. 3-18-16. T.D. 2,200 ft.; S.W.; S.D.; W.O.
Lion Oil No. 1 Morgan, sec. 18-18-17. O.W.D.D. (formerly Phillips Pet. Co.); hvy. shows oil on D.S.; comp.; flw. 32 B.P.H.; ¾-in. tbg. ck.; T.D. 5,559 ft.
Marine Oil Co. No. 6-E W. B. Thompson, SW NE NE sec. 10-18-18. Drlg. 458 ft.
Penn-Ark. Corp No. 1 W. N. Raulston, 330 ft. S and E. NW NW SE sec. 12-17-14. T.D. 2,983 ft.; W.O.S.R.
S. H. A. Oil Corp. No. 1 H. D. Warren, NE SW SW sec. 10-17-14. Drlg. out cmt. 3,342 ft. and W.O.S.R.; T.D. 3,342 ft.
Sklar No. 1-A Cordell, NE SE SW sec. 24-17-16. Drlg. 765 ft.

TEXAS

Week ending April 10

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 12 A. L. McCasland, W. C. White Sur. Drlg. sh. 4,120 ft.
Humble O. & R. Co. No. 15 L. R. Sherwood, W. C. White Sur. T.D. 3,155 ft.; I.P. 1,128 B.P.D.; ¼-in. ck.
Humble O. & R. Co. No. 19 Thompson, W. C. White Sur. T.D. 4,110 ft.; 5½-in. csg. 4,070 ft.

Hastings—Brazoria County

Frost, Lowery & Goldston No. 1 Cecil Brown, center Lot 12, B.B.B.&C. Sur. Drlg. 2,780 ft.; no report.
W. L. Goldston et al No. 1 Thomas Ross, S. McKissick Sur., Blk. F. Spudded.
Humble O. & R. Co. No. 1 J. T. Baker, Lot 13, B.B.B.&C. Sur. Drlg. sh. 6,130 ft.
Humble O. & R. Co. No. 9-A Brown, Wm. Snyder Sur. T.D. 6,080 ft.; I.P. 628 B. P.D.; ¼-in. ck.
Humble O. & R. Co. No. 1 C. W. French, Lot 8, B.B.B.&C. Sur. Drlg. sh. 2,966 ft.
Humble O. & R. Co. No. 1 H. F. Johnson, Lot 19, B.B.B.&C. Sur. T.D. 6,100 ft.; I.P. 581 B.P.D.; ¼-in. ck.
Humble O. & R. Co. No. 1 Southwestern University, Wm. Henery Sur. Drlg. sh 1,281 ft.
Navarro Oil Co. No. 2 Callahan, Lot 5, H.T.&B. Sur. No. 29. Loc.
Navarro Oil Co. No. 1 Callahan, Lot 6, H.T.&B. Sur. No. 29. T.D. 6,100 ft.; 7-in. csg. 5,711 ft.; I.P. 27 B.P.H.; ¼-in. ck.
Albert Plummer No. 1 A. W. Brown, C Lot 74, Perry & Austin Sur. Abd. 6,180 ft.
Stanolind O. & G. Co. No. 3-A Avitts, H.T.&B. Sur. No. 29. 16-in. csg. 90 ft: W.O.C.
Stanolind O. & G. Co. No. 2 Frank M. Berger, H.T.&B. Sur. No. 37. 10¾-in. csg. 1,657 ft.; W.O.C.
Stanolind O. & G. Co. No. 3 C. H. Blount, B. T. Masterson Sur. Drlg. sh. and shell 3,656 ft.
Stanolind O. & G. Co. No. 9 Drake, H.T.& B. Sur. No. 36. 16-in. csg. 90 ft.; drlg. sd. 2,331 ft.
Stanolind O. & G. Co. No. 1 A. C. McKibben, H.T.&B. Sur. No. 29. T.D. 6,080 ft.; 7-in. csg. 5,867 ft.; W.O.C.
Stanolind O. & G. Co. No. 2 McKibben, Lot 16, H.T.&B. Sur. No. 29. R.U.
Stanolind O. & G. Co. No. 1 Massey Condon, Lot 20, H.T.&B. Sur. No. 29. Drk.
Stanolind O. & G. Co. No. 2 Condon, Lot 11, H.T.&B. Sur. R.U.
Stanolind O. & G. Co. No. 3 Law, H.T.&B. Sur. No. 36. Setting 16-in. csg. 90 ft.
Stanolind O. & G. Co. No. 2 Steve Paul, A. C.H.&B. Sur. No. 2 Drlg. sd. 5,759 ft.
Stanolind O. & G. Co. No. 3 Steve Paul, A. C.H.&B. Sur. Drlg. sh. 2,029 ft.
Stanolind O. & G. Co. No. 8 Williams, A. C.H.&B. Sur. No. 1. T.D. 6,080 ft.; 7-in. csg. 6,012 ft.; I.P. 612 B.P.D.; ¼-in. ck.; T.P. 850 lbs.; C.P. 700 lbs.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. T.D. 8,164 ft.; rng. 7,000 ft. of 9⅝-in. csg.; P.B. to 2,400 ft.; sdtrkd.; 9⅝-in. csg. 5,000 ft.; drlg. sd. 7,867 ft.
Gulf Oil Corp. No. 1 Carrie Baker, J. W. Hall Sur. No. 68. 7-in. csg. 6,348 ft.; T.D. 6,368 ft.; I.P. 615 B.P.D.; ¼-in. ck.
Gulf Oil Corp. No. 2 Gibson, J. W. Hall Sur. Drk.
Gulf Oil Corp. No. 1-A G. L. Wood et al, Thomas Alsberry Sur. No. 4, Abst. No. 2. 13⅜-in. csg. 1,431 ft.; drlg. sh. and L. 4,800 ft.
Gulf Oil Corp. No. 3 Wilkes Smith, J. W. Hall Sur. R.U.
Shell Pet. Corp. No. 3 Ramsey State Farm, J. W. Hall Sur. No. 11. R.U.

Manvel—Brazoria County

Burton Drilling Co. No. 1 J. Kroll, center Lot 101, A.C.H.&B. Sur. No. 92. R.U.
L. C. McBride-San Jacinto Oil Co. No. 1 F. E. Whites, E. Little Sur. T.D. 4,067 ft.; run csg.
R. Olsen No. 2 Nichols, H. N. Little Sur. Drlg. sh. 1,410 ft.
E. A. Stone No. 1 Nichols, E. Little Sur. Drk.
Texas Co. No. 24 Houston Oil Field Assn., Lot 16, A.C.H.&B. Sur. Drlg. sd. 5,658 ft.
Texas Co. No. 4 Lemmer, S. Spraggins Sur. Drk.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 4 Bernard River Ld. and Development Co., Charles Breen Sur. 13⅜-in. csg. 1,405 ft.

West Columbia—Brazoria County

Texas Co. No. 15 Abrams, Geo. Tenille Lge. Sur. 10-in. csg. 1,156 ft.; abd. 6,275 ft.

Heyser—Calhoun County

Humble O. & R. Co. and Plymouth Oil Co. No. 12-B P. H. Welder, A. Sisneros Sur. T.D. 5,495 ft.; perf. csg. 5,482-86 ft.; I.P. 5 B.P.H.; ⅝-in. ck.
Humble O. & R. Co.-Plymouth Oil Co. No. 13-B P. H. Welder, A. Sisneros Sur. Drk.
Humble O. & R. Co.-Plymouth Oil Co. No. 14-B P. H. Welder, A. Sisneros Sur. R.U.
Portilla Drlg. Co. No. 12-C P. H. Welder, A. Sisneros Sur. T.D. 5,485 ft.; I.P. 8 B.P.H.; ⅝-in. ck.
Portilla Drlg. Co. No. 13-C P. H. Welder, A. Sisneros Sur. T.D. 5,453 ft.; I.P. 10 B.P.H.; ⅝-in. ck.
Portilla Oil Co. No. 15-C P. H. Welder, A. Sisneros Sur. Drlg. sh. 803 ft.

Anahuac—Chambers County

Gulf Oil Corp. No. 2 Pommer, sec. 40, H. &T.C. Sur. R.U.
Gulf Oil Corp. No. 7 Knowles, W. T. Knowles Sur. T.D. 7,115 ft. tstg.
Gulf Oil Corp. No. 4 G. C. Wilcox, W. T. Knowles Sur. 10¾-in. csg. 2,020 ft.; T.D. 7,080 ft.; 7-in. csg. 7,040 ft.; I.P. 711 B.P.D.; ¼-in. ck.
Gulf Oil Corp. No. 5 Wilcox, sec. 48, H. &T.C. Sur. R.U.
Gulf Oil Corp. No. 6 Wilcox, sec. 48, H. &T.C. Sur. R.U.
Humble O. & R. Co. No. 1 E. T. Drought, H.&T.C. Sur., sec. 46. T.D. 7,137 ft.; P.B. 7,103 ft.; 5½-in. csg. 7,108 ft.; perf. csg. 7,100-02 ft.; tstg.
Humble O. & R. Co. No. 10, Gripon, sec. 51, H.&T.C. Sur. Drlg. sh. 6,265 ft.
Humble O. & R. Co. No. 12 Gripon, H.& T.C. Sur. No. 51. Drk.
Humble O. & R. Co. No. 7 G. C. Johnson, sec. 47, H.&T.C. Sur. Bldg. drk.
Humble O. & R. Co. No. 10 Max Engles, sec. 50, H.&T.C. Sur. 9⅝-in. csg. 1,225 ft.; W.O.C.
Humble O. & R. Co. No. 26 Middleton, H. &T.C. Sur., sec. 62. T.D. 7,135 ft.; tstg.
Humble O. & R. Co. No. 13-B White, J. McGahey Sur. Drk.

Barbers Hill—Chambers County

Superior O. & G. Co. No. 3 G. W. Baker, H. Griffith Sur. Drlg. sh. 1,210 ft.
A. Weber et al No. 1 Zappe, Wm. Bloodgood Sur. Drlg. sh. 2,137 ft.

Cotton Lake—Chambers County

Salt Dome Oil Co. No. 1-D Lawrence, 932 ft. W of No. 1-C, S. Barrow Sur. Drlg. sh. 2,730 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 1-A Broussard-Hebert, T. &N.O. Sur. No. 127. R.U.
Sun Oil Co. No. 1-B White, Wm. Mays Sur. 18⅝-in. csg. 1,226 ft.; T.D. 9,637 ft.; rmg.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1 Silva-Shadrack, Burney Sur. R.U.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 75 T. W. Davis, M. Young Sur. Drlg. 7,812 ft.

Blue Ridge—Fort Bend County

Telshaw-Reese and Echelson No. 1 Blakely, E. Drew Sur. Spudded.
Texas Gulf Prod. Co. No. 16 Blakely, Lot 9, Blk. C. Drlg. sh. 1,833 ft.

Boling—Fort Bend County

Crosby et al No. 1 H. R. Farmer, J. Scott Sur. Abd. 5,019 ft.
John Deering No. 1 J. M. Moore, Charles Bettner Sur. Drlg. sh. and L. 2,755 ft.
Mack Hank Oil Co. No. 3-B J. R. Farmer, J. Scott Sur. T.D. 4,877 ft.; 7-in. csg. 4,855 ft.
Mack Hank Oil Co. No. 5-C E. C. Farmer, J. Scott Sur. Loc.

Orchard—Fort Bend County

Gulf Oil Corp. No. 52 Moore, James Frazier Sur. Drk.
Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8, 13⅜-in. csg 2,522 ft.; drlg. sh. 6,912 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 1-B Cade, H. Denman Sur. Drlg. sdy. sh. 5,354 ft.; no report.
Stanolind O. & G. Co. No. 61 Cade, N. Fitzsimmons Sur. Drlg. sh. 3,815 ft.
Stanolind O. & G. Co. No. 15-A Smith, M. Dunman Sur. R.U.

Dickinson—Galveston County

Atlantic O. & Ref. Co. No. 1 G. O. Anderson, P. G. Merritt Sur. Oil sd. 8,066-92 ft.; T.D. 8,098 ft.; 7-in. csg. 8,098 ft.; perf. csg. 8,071-75 ft.; I.P. 23 bbls. P.L. O. per day; ¼-in. ck.
Atlantic Ref. Co. No. 1 R. C. Roberts, P. G. Merritt Sur. R.U.
Coast Pet. Corp. No. 6 Maco Stewart, W. K. Wilson Sur. Drlg. sh. 6,176 ft.
Diadem Oil Corp. of Texas No. 2 W. J. Way, E. P. Epperson Sur. T.D. 8,198 ft.; 6⅝-in. csg. 8,191 ft.; perf. csg.
Diadem Oil Corp. of Texas No. 1 Pauline Frederick. Loc.
Humble O. & R. Co. No. 15-A Maco Stewart, W. K. Wilson Sur. Loc.
Humble O. & R. Co. No. 17-A Stewart, J. Sellers Sur. Drlg. sh. 5,236 ft.
Humble O. & R. Co. No. 18-A Stewart, W. K. Wilson Sur. Drlg. sdy. sh. 2,074 ft.
W. E. McKinney et al No. 3-A Galveston-Houston Elec. R.R., W. K. Wilson Sur. Drlg. 5,212 ft.
Pure Oil Co. No. 1 Sealy Hutchings, P. G. Merrett Sur. 10¾-in. csg. 1,826 ft.; T.D. 8,111 ft.; 5½-in. csg. 8,111 ft.; perf. csg. 8,058-61 ft.; I.P. 26 B.P.D.; ¼-in. ck.
Pure Oil Co. No. 1-B Sealy Hutchins, P. G. Merritt Sur. R.U.
Sinclair Prairie Oil Co. No. 1 W. Weems, W. K. Wilson Sur. Loc.
Stanolind O. & G. Co. No. 1 Dameani, W. K. Wilson Sur. Drlg. sh. 8,756 ft.
Stanolind O. & G. Co. No. 7 State, 13⅜-in. csg. 2,013 ft.; drlg. L. and sh. 4,600 ft.

Greens Lake—Galveston County

Sun Oil Co. No. 8 Hughes, W. C. M. Baker Sur. Drlg. sd. rock 3,682 ft.

Batson—Hardin County

Bunte O. & G. Co. No. 1 Melhome, J. Melhome Sur. R.U.

Silsbee—Hardin County

Republic Prod. Co.-Houston Oil Co. No. 9 Brooks, G. W. Brooks Sur. Drlg. 602 ft.
Republic Prod. Co.-Houston Oil Co. No. 10 Brooks, G. W. Brooks Sur. T.D. 6,958 ft.; 7-in. csg. 6,953 ft.
Republic Prod. Co.-Houston Oil Co. No. 11 Brooks, G. W. Brooks Sur. 10¾-in. csg. 1,441 ft.; T.D. 6,964 ft.; P.B. 6,953 ft.; W.O.C.
Republic Prod. Co.-Houston Oil Co. No. 12 Brooks fee, G. W. Brooks Sur. Bldg. drk.
Republic Prod. Co.-Houston Oil Co. No. 13 Brooks fee, G. W. Brooks Sur. Bldg. road.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 D. A. Oates, C. Martinez Sur., Abst. 543; 9⅝-in. csg. 6,771 ft.; drlg. sdy. sh. 8,067 ft.; top gas sd. 8,063 ft.; cg. sh. 8,776 ft.

Fairbanks—Harris County

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 W. Jacobs, Blk. 1, sec. 2, W.C.R. R. Sur. Bldg. drk.

Mykawa—Harris County

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

Pierce Junction—Harris County

Gulf Oil Corp. No. 42 Taylor, J. Hamilton Sur. Drk.

Hamil & Smith No. 3 Saunders, B.B.B.& C. Sur. Top salt 3,981 ft.; T.D. 4,000 ft.; csg. collapsed.

South Houston—Harris County

Stanolind O. & G. Co. No. 2 Dist. No. 8. T.D. 1,480 ft.; drlg. plug.

Stanolind O. & G. Co. No. 2 Dist. 9. R.U.

Stanolind O. & G. Co. No. 2 Dist. 51. R.U.

Stanolind O. & G. Co. No. 6 First Natl. Bank, Callahan and Vince Sur. T.D. 4,045 ft.; P.B. 2,380 ft.; T.D. 4,035 ft.; 5½-in. csg. 4,020 ft.; I.P. 234 bbls. in 14 hrs.; ¼-in. ck.

Stanolind O. & G. Co. No. 2 Green, H.T. &B. Sur. No. 6. 9⅝-in. csg. 1,429 ft.; T.D. 4,023 ft.; 5½-in. csg. 4,001 ft.; I.P. 404 B.P.D.; ¼-in. ck.

Stanolind O. & G. Co. No. 5 Holland and Price, H.T.&B. Sur. No. 6. 13⅜-in. csg. 90 ft.; T.D. 4,030 ft.; P.B.; sdtrkd.; drlg. sh. 2,873 ft.

Stanolind O. & G. Co. No. 2 C. P. Williams, H.T.&B. Sur. No. 6, Tr. 45. Drlg. sh. 1,196 ft.

Stanolind O. & G. Co. No. 1 Worley H.T. & B. Sur. No. 6. Drlg. sh. 1,446 ft.; R.U.

Tomball—Harris County

Humble O. & R. Co. No. 2 Hagler, Chas. Maroutt Sur. Drlg. sh. 5,529 ft.

Humble O. & R. Co. No. 1 L. T. Norvell, P. Pruitt Sur. Drlg. sh. 5,550 ft.

Humble O. & R. Co. No. 3 Martens, G. Lamb Sur. Drk.

Humble O. & R. Co. No. 1-B Murphy, J. Pruitt Sur. Drk.

Humble O. & R. Co. No. 1 Tomball Townsite Unit No. 8, Wm. Hurd Sur. T.D. 5,574 ft.; 5½-in. csg. 5,569 ft.

Lourey Drlg. Co. No. 2 Hillegeist, J. House Sur. Drlg. sh. 2,676 ft.

Mauritz—Jackson County

Shell Pet. Corp. No. 1-B Mauritz. T.D. 5,703 ft.; 5-in. csg. 5,693 ft.; P.B. 5,651 ft. perf. csg. 5,645-47 ft.; flwd. 90 bbls. of net oil, 40 bbls. of S.W.; 9/64-in. ck.

Amelia—Jefferson County

Humble O. & R. Co. No. 1 A. Busceine, C. Blk. 3, C. Williams Sur. Drlg. sh. 2,000 ft.

Humble O. & R. Co. No. 1-B Ephlin, Lot 18, Blk. D., C. Williams Sur. Drk.

Humble O. & R. Co. No. 1-G Ephlin, Blk. E, Lot 4, Mayfair Subd., C. Williams Sur. Drlg. sh. 1,554 ft.

Humble O. & R. Co. No. 1 Freeman, C. Williams Sur. T.D. 6,780 ft.; I.P. 26 B. P.H.; ¼-in. ck.

Humble O. & R. Co. No. 1 Gist, C. Williams Sur. T.D. 6,780 ft.; I.P. 26 B.P.H.; ¼-in. ck.

Humble O. & R. Co. No. 2 Industrial Invest Co., C. Williams Sur. Drlg. sh. 2,000 ft.

Humble O. & R. Co. No. 1 J. E. LaGrange, Lot 33, Blk. E, C. Williams Sur. Top sd. 6,760 ft.; T.D. 6,783 ft.; I.P. 18 B. P.H.; ¼-in. ck.

Humble O. & R. Co. No. 1-B M. I. Lefler, Unit 19, Blk. E, C. Williams Sur. T.D. 6,783 ft.; 5½-in csg 6,778 ft

Humble O. & R. Co. No. 2 M. L. Lefler, C. Williams Sur. T.D. 6,780 ft.; 5½-in. csg. 6,776 ft.

Humble O. & R. Co. No. 2-B M. I. Lefler, Lot D, C. Williams Sur. Loc.

Humble O. & R. Co. No. 1 A. L. Nolan, Blk. E, Williams Sur. Loc.

Humble O. & R. Co. No. 3 J. H. Phelan, C. Williams Sur. Loc.

Humble O. & R. Co. No. 1 G. Sims, C. Williams Sur. Drlg. sh. 6,675 ft.

Humble O. & R. Co. No. 4 Tyrell, A. Savery Sur. T.D. 6,780 ft.; 5½-in. csg. 6,780 ft.; P.B. 6,751 ft.; tstg.

Humble O. & R. Co. No. 1 W. M. Wohlfert, C. Williams Sur. Drk.

Glenn H. McCarthy No. 4 Long, H. Williams Sur. Drlg. sh. 3,910 ft.

Normandie Oil Co. No. 1 R. J. Peveto, C. Williams Sur. R.U.

Normandie Oil Co. No. 2 R. J. Peveto, C. Williams Sur. Loc.

Normandie Oil Co. No. 1 Tyrell Combest, Blk. 8, A. Savery Sur. Loc.

Peyton Bros. No. 1 Pansy Yount, A. Houston Sur. Drk.

Stanolind O. & G. Co. No. 1 J. W. Hall, H. Williams Sur. Drlg. sh. 3,937 ft.

Stanolind O. & G. Co. No. 2 Sargl, H. Williams Sur. 16-in. csg. 60 ft.; W.O.C.

Stanolind O. & G. Co. No. 3 Sargl, H. Williams Sur. R.U.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 2 M. E. Fitzhugh, Wm. McFaddin Sur. R.U.

Fannett—Jefferson County

Gulf Oil Corp. No. 1 Junker, W. A. Smith Sur. T.D. 6,044 ft.; 9⅝-in. csg. 6,009 ft.

LaBelle—Jefferson County

Sun Oil Co. No. 1 John Ward, 933 ft. S of No. 2 Broussard, Wm. Burton Sur. 18⅝-in. csg. 109 ft.; drlg. sh. 6,440 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 5 Carpenter, M Peveto Sur. T.D. 6,145 ft.; tstd. S.W. on D.S.T.; 5-in. csg. 6,075 ft.; P.B. 6,040 ft.; swbg.

Shell Pet. Corp. No. 5 Paggi, Kirby Sur. T.D. 6,050 ft.; 5-in. csg. 6,011 ft.

Shell Pet. Corp. No. 1 Texas Public Service Co., W. H. Aldridge Sur. Drk.

Sun Oil Co. No. 1 J. E. Burrows, J. Blair Sur. Drlg. sh. and L. 3,673 ft.

Sun Oil Co. No. 6 Paggi, J. W. Kirby and W. H. Aldridge Sur. R.U.

Sun Oil Co. No. 7 Paggi, J. W. Kirby and W. H. Aldridge Sur. Loc.

Sun Oil Co. No. 1 A. J. Mouboules, J. Blair Sur. 10¾-in. csg. 1,062 ft.; T.D. 8,768 ft.; P.B. 8,175 ft.; making D.S.T.

Cleveland—Liberty County

Gulf Oil Corp. No. 17-C Kirby, J. Pleasants Sur. Spudded.

Hankamer—Liberty County

Gulf Oil Corp. No. 2-A Weiser, George Stengler Sur. Drlg. sh. 4,930 ft.

Hull—Liberty County

Bishop Oil Co. No. 1 C. R. Wilson, J. DeVore Sur. Oil sd. 780-88 ft.; no report.

D.&L. Production Co. No. 4 Mecon and Layton, J. Devore Sur. T.D. 4,960 ft.; 7-in. csg. 4,411 ft.; testing.

Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; S.D.

Gulf Oil Corp. No. 23 Baldwin, J. Devore League Sur. Oil sd. 4,975-5,014 ft.; T.D. 5,016 fti; no report.

Hamil and Smith No. 1 Barngrover, J. DeVore Sur. R.U.

Republic Prod. Co. No. 162 Dolbear, J. Devore Sur. T.D. 2,499 ft.; 5-in. csg. 2,411 ft.; tstg.

Texas Co. No. 6 Hannah, J. Devore Sur. Drlg. sh. 3,557 ft.

Esperson—Liberty County

General Crude Oil Co. No. 26 Moores Bluff. Loc.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocker, E. Hall Sur. 13⅜-in. csg. 1,260 ft.; 9⅝-in. csg. cmtd. at 6,500 ft.; T.D. 9,575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 8,806-19 ft., 8,832-36 ft., 8,944-49 ft.; tstd. S.W.; set cmt. retainer at 8,200 ft.; perf. csg. 8,190-94 ft.; flwd. 650 bbls. flowing 470 bbls. of fluid per day through ¼-in. ck., 4 to 8% S.W.; W.P. 300 lbs.

Palacios—Matagorda County

Glenn H. McCarthy No. 1 Foley Land Co., L. Goodwin Sur. Loc.

Hawkinsville—Matagarda County

Sun Oil Co. No. 2 Craig, T. Williams Sur. Top salt 796 ft.; base salt 2,099 ft.; 18⅝-in. csg. 2,174 ft.; 13⅜-in. csg. 3,700 ft.; drlg. sh. and L. 5,001 ft.

Markham—Matagarda County

G. G. Hamil, Tr., No. 2 T. E. Hudson, H. Parker Sur. Drlg. 3,672 ft.

Van Vleck—Matagarda County

Skelly Oil Co. No. 2 W. P. Johnson, M. Cummings Sur. Loc.

Royal Oil Co. No. 1 Fine Holub, M. Cummings Sur. Drlg. sh. 6,630 ft.

Skelly Oil Co. No. 2 Rugely, I.&G.N. Sur. No. 8. 10¾-in. csg. 1,399 ft.; tstg. perf. csg. 8,060-72 ft.

Skelly Oil Co. No. 1 First Natl. Bank, I.&G.N. Sur. No. 7. T.D. 8,267 ft.; rec. 3,600 ft. of P.L.O. on D.S.T.; 7-in. csg. 8,265 ft.; perf. csg. 8,230-35 ft.; I.P. 631 B.P.D.; ¼-in. ck.

Skelly Oil Co. No. 2 Grace Moore, I.&G.N. Sur. Drlg. 515 ft.

Conroe—Montgomery County

Butler & Hornes No. 1 Koonee, Collins Sur. Cg. 5,000 ft.

Ace—Polk County

Peyton Bros. No. 1 A. H. Waldenan, P. A. Sublett Sur. R.U.

Livingston—Polk County

Ownby Drlg. Co. No. 2 W. B. Munson, A. Viesca Sur. Drk.

Segno—Polk County

J. K. Dorrance No. 3 Wing, I.&G.N. Sur. No. 15. 10¾-in. csg. 610 ft.; drlg. sd. 3,953 ft.

Gulf Oil Corp. No. 1 Wing, I.&G.N. Sur. No. 15. Drlg. sh. 5,100 ft.

Gulf Oil Corp. No. 2 Wing, I.&G.N. Sur. No. 15. Loc.

Humble O. & R. Co. No. 1 Kirby Lbr. Co., P. Garcia Sur. Top Cockfield 5,122 ft.; T.D. 5,202 ft.; 7-in. csg. 5,187 ft.; flwd. 6 B.P.H., 18 to 85% S.W.; P.B. 5,197 ft.

Humble O. & R. Co. No. 2 Kirby, P. Garcia Sur. Loc.

LaQuinta Oil Co. No. 1 Wing Est., I.&G.N. Sur. No. 15. Drk.

Rajo Oil Corp. No. 1 Sarah Wing, I.&G.N. Sur. No. 15. Loc.

Quintana-O'Connor-Greta—Refugio County

Cosmo Pet. Co. No. 16 Heard, Blk. 119, Refugio Townsite. Drlg. 2,730 ft.

Hewitt & Daugherty No. 44 Lambert, Swisher Sur. No. 6. Drlg. 1,810 ft.

Hewitt & Daugherty No. 47 Lambert, Swisher Sur. Drlg. sh. 5,212 ft.

Illinois Pet. Co. No. 3 Heard, Ximines Sur. T.D. 5,600 ft.; tstg.

Josey & Bruton No. 1-B Lambert, Hews Sur. Drlg. 5,030 ft.

Quintana Pet. Co. No. 40 Lambert, Swisher Sur. Loc.

Quintana Pet. Co. No. 43 Lambert, Swisher Sur. Loc.

Quintana Pet. Co. No. 46-A Tomoconnor, J. M. Swisher Sur. No. 4. Cg. 6,000 ft.

Quintana Pet. Co. No. 13-C Tomoconnor Swisher Sur. T.D. 5,960 ft.; W.O.C.

United Gas Corp. No. 40 Lambert, Blk. 43, Swisher Sur. T.D. 5,940 ft.; comp.; I.P. 350 B.P.D.; ¼-in. ck.

United Gas Corp. No. 48 Lambert, J. M. Swisher Sur. Drlg. Drlg. sh. 5,730 ft.

United Gas Corp. No. 50 Lambert, J. M. Swisher Sur. Drlg. sh. 5,910 ft.

United Gas Corp. No. 12 J. J. O'Brien. T.D. 8,204 ft.; fsg.

Keeran—Victoria County

Gulf Oil Corp. No. 10 Keeran Estate, M. DeLeon Sur. Cg. 5,937 ft.

Union of California No. 3 J. M. Keeran Est., M. DeLeon Sur. T.D. 6,000 ft.; perf. csg. 5,953-58 ft.; I.P. 5 B.P.H.; 9/64-in. ck.

Placedo—Victoria County

Barnsdall-American Liberty Oil Co. No. 3 E. G. Gray, S.A.&M.G. Sur. T.D. 4,775 ft.; 7-in. csg. 4,754 ft.; I.P. 63 bbls. in 10 hrs.; 5/32-in. ck.

Barnsdall-American Liberty Oil Co. No. 10 J. M. Pickering, Wm. Rupley Sur. T.D. 4,760 ft.; W.O.C.

Barnsdall-American Liberty Oil Co. No. 14 Pickering, S.A.&M.G. Sur. Drlg. 3,812 ft.

Costa Oil Co. et al No. 2 J. E. Schovajsa, Wm. Rupley Sur. R.U.

Crown Central Oil Co. No. 4 O. M. Lauder, S.A.&M.G. Sur. No. 6. T.D. 4,786 ft.; tstg.; swbd. S.W. and oil; P.B. 4,780 ft.; shut in; I.P. 91 B.P.D.; ¾-in. ck.

Magnolia Pet. Co. No. 6 Sklar, S.A.&M.G. Sur., Lot 8. T.D. 4,769 ft.; I.P. 93 bbls. in 12 hrs.; ¼-in. ck.

Magnolia Pet. Co. No. 7 Sklar, Lot 18, S. A.&M.G. Sur. No. 7. Drk.

Shell Pet. Corp. No. 2 Houston Natl. Bank, S.A.&M.G. Sur. No. 7. T.D. 4,770 ft.; 7-in. csg. 4,755 ft.; I.P. 144 B.P.D.; ¼-in. ck.

Shell Pet. Corp. No. 3 Houston National Bank, Lot 6, S.A.&M.G. Sur. R.U.

Superior Oil Prod. Co. and Gillespie No. 3 J. J. Hosek, S.A.&M.G. Sur. T.D. 4,766 ft.; I.P. 93 B.P.D.; 7/64-in. ck.

Superior Oil Co.-Gillespie No. 1 J. J. Hosek, S.A.&M.G. Sur. T.D. 4,769 ft.; I.P. 4 B.P.H.; ⅛-in. ck.

Superior O. & G. Co. et al No. 5 J. J. Hosek, S.A.&M.G. Sur. Drk.

Westgate Oil Co. No. 6 F. F. Mleska, S.A. &M.G. Sur. No. 10. Drk.

Clay Creek—Washington County

Sun Oil Co. No. 6 Droger, J. Perry Sur. Bldg. drk.

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. 7-in. csg. 7,445 ft.; T.D. 8,306 ft.; P.B. to csg. seat; perf. csg. 7,549-7,365 ft. and 5,100-10 ft.; tstd. S.W.; cmtd. back 7,341 ft.; abd.

Virginia Oil Co. No. 1 Joe Kenieczny, S. M. Williams Sur. 10¾-in. csg. 104 ft.; S.D. 1,500 ft.

Five Corners—Wharton County

Texas Co. No. 7-B Pierce Est., J. Caldwell Sur. Drk.

Texas Co. No. 6-B Pierce, J. Hyland Sur. T.D. 5,554 ft.; 7-in. csg. 5,544 ft.; swbg. wash wtr. and oil.

Pickett Ridge—Wharton County

Texas Co. No. 33-A Pierce Est., G.B.&N. Sur. No. 4; 9,000-ft. test. Bldg. drk.

Withers—Wharton County

Texas Co. No. 24-C Pierce Est., Wm. Pettus Sur. 10¾-in. csg. 1,207 ft.; T.D. 5,556 ft.; 7-in. csg. 5,551 ft.; flwd. 12 bbls. in 3½ hrs.; ½-in. ck.

Texas Co. No. 25-C Pierce Est., Wm. Pettus Sur. Drlg. sh. and L. 4,654 ft.

Texas Co. No. 26-C Pierce, Wm. Pettus Sur. 10¾-in. csg. 1,233 ft.; drlg. sh. and L. 3,786 ft.

GULF COAST WILDCATS

Austin County

R. L. Hopkins No. 1 J. W. Recnecke, J. Stephenson Sur. R.U.

Brazoria County

Pure Oil Co. No. 1 P. M. Slade, S. F. Austin Lge. Drlg. sh. 6,497 ft.

Texas Co. No. 2 Robbins, James W. Brougham Sur. Drlg. sd., L. and sh. 5,107 ft.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8, Matagorda Island. 13⅜-in. csg. at 1,826 ft.

Fort Bend County

Research, Inc., No. 1 J. M. Moore, S. Kennedy Sur. 10¾-in. csg. 448 ft.; drlg. sh. 1,500 ft.

Galveston County

Shell Pet. Corp. No. 2 Maco Stewart, 4,400 ft. E of No. 1 J. Spillman Sur. 10¾-in. csg. 1,484 ft.; T.D. 6,250 ft.; sdtrkd. 6,021 ft.; cg. sh. 6,698 ft.

Hardin County

E. J. Kimball No. 1 Keitle Lbr. Co. Loc.

Harris County

H. J. DeArman et al No. 1 Tyrell-Garth, L. Hemminway Sur. R.U.

R. W. Ford et al No. 1 W. A. and O. C. Pruitt, G. Brooks Sur. Loc.

H. M. Harrell et al No. 1 F. N. Bullock, Charles Bowman Sur. Drlg. sh. 5,382 ft.

Stanolind O. & G. Co. No. 1 Warren Minerals, H.T.&B. Sur. No. 1. 7⅝-in. csg. 5,749 ft.; T.D. 6,685 ft.; flwd. S.W. 6,549-87 ft.; set retainers 3,800 ft.; tstd. sulfur wtr.; set retainer at 3,700 ft.; perf. csg. 3,665-95 ft.; abd.

Superior Oil Co. No. 1 Bentler, Ehrhardt Sur. Loc.

Texas Gulf Prod. Co. No. 1 Gillespie and Garnsey, Simon Contreras Sur. 10¾-in. csg. 1,438 ft.; T.D. 8,084 ft.; perf. csg. 7,097-7,100 ft.; swbd. dry; may reperf.

Houston County

American Liberty Oil Co. No. 1 J. D. Bean, D.W.R.R. Co. Sur. 10¾-in. csg. 1,796 ft.; T.D. 6,260 ft.; 7-in. csg. 6,120 ft.; tstg.

H. L. Hunt No. 1 J. E. Elliott, J. M. Procella Sur. 13⅜-in. csg. 495 ft.; sg. 6,105 ft.

Jackson County

Texas Co. No. 1 T. A. Mauritz, Morris and Cummings Sur. Rec. 130 ft. of mudcut oil, 350 lbs. pressure; T.D. 5,111 ft.; 7-in. csg. 5,080 ft.; tstg.

Jefferson County

Humble O. & R. Co. No. 1 Jefferson Ld. Co., C. Hillibrant Sur. T.D. 8,232 ft.; 7-in. csg. 8,162 ft.; T.D. 8,458 ft.; cutting and pulling stuck D.S.; P.B. 7,860 ft.; drld. out 7,880 ft.; perf. csg. 7,830-45 ft.; flwd. dry gas and S.W.; killed; perf. csg. 7,831-34 ft.; flwd. gas and S.W.; killed.

Magnolia Pet. Co. No. 1 J. H. Phelan, T.&N.O. Sur. No. 14. 13⅜-in. csg. 3,016 ft.

David B. MacDaniel et al No. 1 Nona Mills, J. C. Grant Sur. Drlg. sh. 6,212 ft.

Lavaca County

Welshire Union Oil Co. No. 1-A Pohl, F. Bass Sur. T.D. 3,250 ft.; P.B. 2,950 ft.; two tests failed; S.D.

Liberty County

Jack Frazier et al No. 1 B. F. Haoachy, Hugh B. Johnson Sur. Drk.

Matagorda County

Continental Oil Co. No. 2 Hawkins Est., D. McCarthy Sur. Loc.

Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. 11¾-in. csg. 6,430 ft.; T.D. 8,912 ft.; 8⅝-in. csg. 8,912 ft.; drlg. plug.

Glenn McCarthy No. 1 Foley, sec. 19, Susan Perkins Sur. 10¾-in. csg. 2,008 ft.; T.D. 8,585 ft.; oil sd.; rng. 7-in. csg. perf. csg. 8,573-83 ft.; gas and S.W.; set retainer at 7,906 ft.; perf. csg. 7,873-85 ft.; flwg. gas and wash wtr.; flwd. 172 bbls. of fluid per day, 26% dist.; W.P. 2,750 lbs.; C.P. 3,000 lbs.; shut in.

United North & South Development Co. No. 1, J. S. Cotton Sur. Drlg. sh. 9,165 ft.

Polk County

C. E. Gates No. 1 L. O. Jackson, J. W. Abbey Sur. R.U.

Mayo et al No. 1 Catline Mayo, J. G. Loving Sur. 10¾-in. csg. 250 ft.; drlg. sh. 2,105 ft.

Refugio County

Wynne Drlg. Co. No. 1 C. D. Roadche-J. Patrick and J. Downey Sur. Abd. 6,531 ft.

San Jacinto County

Cockburn et al No. 1 Whitten Est., Wm. West Sur. Loc.

Tyler County

Republic Prod. Co.-Houston Oil Co. No. 2 Hurd, N. Hurd Sur. 10¾-in. csg. 2,296 ft.; drlg. sh. 6,715 ft.

Victoria County

Commonwealth O. & G. Co. No. 3 W. H. Bennett, J. Estuvan-Galbon Sur. 7-in. csg. cmtd. on bottom; perf. 5,467-70 ft.; flwg. 3 bbls. fluid per hr.; ⅛-in. ck.; T.D. 5,475 ft.

Magnolia Pet. Co. No. 1 Annie B. Wayne, T.&N.O. Sur. No. A-407. Perf. csg. 2,524-28 ft.; swbd. dry; S.D.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Waller County

Nine Blumenthal No. 1 Alex P. Kelley, S. H. Haddin Sur. Drlg. sh. 3,108 ft.

Nina Blumenthal No. 1 Chapman, M. Donohoe Sur. Drlg. sh. 416 ft.

Red Bank Oil Co. No. 1 Roy Chapman, M. Donohoe Sur. Drlg. 630 ft.

Stanolind O. & G. Co. No. 1 Wm. Hargrove, T. S. Reese Sur., sec. 110. Loc.

Washington County

K. D. Harriss and Starr No. 1 Ellerman, A. D. Houston Sur. Drk.

Wharton County

J. F. Hutchins No. 1 J. J. Winsley, James Tumlinson Sur. 10¾-in. csg. 647 ft.; T.D. 4,654 ft.; washing to bottom.

Texas Co. No. 1 Kluck, Jos. Hyland Sur. T.D. 4,718 ft.; run 5-in. csg.

S. W. TEXAS WILDCATS

Aransas County

Barnsdall Oil Co. No. 1-A Kate Edwards, 330 ft. S line, Lot 85, 660 ft. SW No. 1, Wm. Lewis Sur. Set 10¾-in. csg. 1,408 ft.; drlg. 7,020 ft.

J. L. Collins No. 1 Wheeler, Cen. Tuton Sur., Tr. 2-D. R.U.

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Set csg. 2,770 ft.; P.B. 2,667 ft.; acidizing.

R. J. Roberts et al No. 1 Elder, Sur. 190. T.D. 3,160 ft.; fsg. drill pipe.

Wheelock & Collins No. 1 Turner, A. Sitton Sur. Drlg. 563 ft.

Bee County

L. Glasscock No. 1 Ablinger, J. Ryan Sur. Set sur. csg. 1,350 ft.; sd. 4,828-50 ft.; S.O.; drlg. ahead.

Blanco County

E. L. Nixon No. 1 Hornberger, 1,200 ft. S line, 300 ft. E line, Sur. 723. Set csg. 837 ft.; W.O.C.

Brooks County

Standard of Tex. No. 1 Mestina, Mestina Lse No. 3. Recmtg. sur. csg. 1,395 ft.

Burleson County

M. R. Exploration Co. No. 3 Fountain, Wm. Raleigh Sur. M.I.M.

Red Bank Oil Co. No. 2 Grann, 6,063 ft. N line, 1,900 ft. W line, E. Santef Sur. M.I. rig.

Caldwell County

Housel Oil Co. No. 1 Woolridge, near Joliet. Drlg. 407 ft.

C. A. McDaniels No. 1 Trammel, H. Hunter Sur. T.D. 2,314 ft.; S.O.; acidizing.

C. A. McDaniels No. 1 Tinkle, S. Seal Sur. T.D. 2,681 ft.; P.B. 2,490 ft.; swbg. oil.

Sherman Nelson No. 1 Etheridge-Hunter Sur. Set csg. 1,970 ft.; W.O.C.

George Young No. 1 Schmidt, 1,265 ft. E line, 150 ft. S line, Williams Sur. Set csg. 1,362 ft.; W.O.C.

Cameron County

Stapper Petroleum Corp. No. 1 Port Isabel Irrigation Co., Blk. 17, P.I.I.Co. Subd Santo Gr. S.D. for repairs 6,170 ft.

Dimmit County

Wilcox O. & G. Co. No. 1 Light ranch, 330 ft. N and E line, sec. 67. Drlg. 2,173 ft.

Duval County

Atlantic Ref. Co. No. 1 Lowe ranch, 330 ft. E line, 1,678 ft. NE cor. Sur. 466. Drlg. 3,926 ft.

Clark & Cowden No. 3 Richardson, 2,310 ft. W line, 330 ft. S line, Sur. 5, R.U.

Diamond Halff Oil Co. No. 1 Sinclair, sec. 405. Cg. 1,877 ft.

Frank Gravis No. 1 Vaello Puig, 330 ft. W line, 2,718 ft. S line, 1,760.73-ac. tr., Sur. 250. Drlg. 5,016 ft.

H. F. Grimm No. 1 Mew, Sur. 289. Cg. 3,093 ft.

E. R. Thomas Estate No. 3 Parr, SW¼, Sur. 26. Drlg. 4,236 ft.

Edwards County

Auld, Dodson & Lyman No. 1 Rigsby, sec. 16. Drlg. 556 ft.

Frio County

Amerada Pet. Corp. No. 1 Harriman, Flores Sur. 306. Drlg. 5,911 ft.

Goliad County

Goliad Oil Corp. No. 1 Cole, 206 ft. W line, CN&SL, Lot 33, Goliad Town Trs. Drk.

Guadalupe County

Byrd Oil Co. No. 1 Schueneman, G. DeWitt League. Cg. chalk.

Louis Crouch No. 1 King, J. D. Clements Sur. R.U.

Lincoln Pet. Co. No. 1 Baenzinger, Mansola Sur. Set csg. 1,990 ft.; drlg. plugs.

Robertson et al No. 1 Blumberg, M. Baker Sur. Drlg. 1,026 ft.

Jim Hogg County

Cole Pet. Co. No. 1 Yeager, Sur. 452. Drlg. 517 ft.

Gifford Oil Co. and Purnell No. 2 Armstrong, S½, Sur. 43. Cg. 2,516 ft.

S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

Tesmalis & Reese No. 1 Martha Earhart, 330 ft. S and W lines, 80-ac. tr., Suggs Sur. Cg. 2,316 ft.

Karnes County

De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. Drlg. 1,026 ft.

Victoria Drlg. Co. No. 1 John Yanta, J. Hardaway Sur. T.D. 1,511 ft.; S.D.

Victoria Drlg. Co. No. 1 Wm. Yanta, J. Hardaway Sur. M.I.M.

Kerr County

S. W. Forrester No. 1 Bailey, Brendle Sur. No. 408. Drlg. 1,016 ft.

Live Oak County

R. H. Feltner No. 2 Sanger, 330 ft. W line, 990 ft. N line, Sur. 385. R.U.

E. M. Jones No. 3 Ezell, SE¼, sec. 3, Ezell ranch. R.U.

Loma Oil Co. No. 1 Anderson, 159-ac. tr., J. Turner Sur. R.U.

R. B. Sanger No. 1 Adams, 330 ft. N and E lines, 80-ac. tr., Sur. 122. R.U.

L. W. Steiren No. 1 Lang, N. Simmons City. T.D. 1,700 ft.; D.&A.

McMullen County

Big Rock Oil Corp. No. 1 Martin, Uleiting Sur. No. 6. S.D. 532 ft.

H. K. Boysen No. 1 Murphy, Murphy Sur. 480. Drlg. 395 ft.

Howell Oil Corp. No. 1 Martin, Sur. 213. Set csg. 60 ft.; W.O.C.

Humble O. & R. Co. No. 1 Gouger, 330 ft. S and E lines, SE¼, sec. 46. Drlg. sh. 3,142 ft.

Reynolds & Richardson No. 1 Shiner ranch, sec. 39, C. C. Shumway Subd. R.U.

Rowan & Hope No. 1 Rhodes, NE¼ sec. 18, Seale & Morris Sur. M.I.M.

F. D. Salter No. 1 fee, J. D. Osborn Sur. R.U.; S.D.

Medina County

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.

Nueces County

Baltic Drlg. Co. No. 1 Poenisch, Lot 2, Blk. 32, Flour Bluff Addn. (workover of former Hurlburt test). O.T.D. 6,250 ft.; R.U.; S.D.

Clarkwood Oil Co. No. 1 H. B. Baldwin, Blk. 11, Russell Farm Lots. Set sur. csg. 712 ft.; W.O.C.

L. Glasscock No. 1 Kansas Life Ins. Co., 330 ft. N and W line, sec. 196. R.U.

Green River Oil Co. No. 1 Cassens, sec 26, Longorio Sur. Spudded.

Southern Minerals Corp. No. 1 R. King, sec. 32, King Farm Lots. D.S.T. 4,021-33 ft.; rec. 400 ft. oil and mud and 45 ft. S.W.; 6 lbs. W.P. in 5 min.; cg. 5,567 ft.

Steve Paul No. 1 Smith, 1,650 ft. E line, 330 ft. S line, sec. 38, Flour Bluff Encinal Trs. Loc.

Taylor Pet. Co. No. 1 Stiles, Blk. 14, sec. 18, Petroni a ranch. S.D.

Wellington Oil Co. and Seaboard Oil Corp. No. 1 Dugger, sec. 125, Park Subd. Set sur. csg. 401 ft.; W.O.C.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. T.D. 5,693 ft.; gas sd.

San Patricio County

Eleanor Oil Co. No. 1 Davis, 208.8-ac. tr., G. Grover Sur. M.I.M.

Eleanor Oil Co. No. 1 Green Est., 1,674-ac. tr., T. T. Williamson Sur. Sds. 6,573-77 ft., 6,580-90 ft. and 6,592-96 ft.; odor oil; drlg. 7,226 ft.

Phillips Pet. Co. No. 1 Schmidt, sec. 81, Paul Subd. Attempted D.S.T. 5,330-53 ft.; failed to hold; rec. 100 ft. mud and oil odor; drlg. hd. sh. 6,697 ft.

Wheelock & Collins No. 1 Willis, Lot 3, Gregory Farm Sur. Set sur. csg. 1,132 ft.; W.O.C.

Windsor Oil Co. No. 1 Bissett, Tr. 3, Trivoli Subd., Crockett Sur. Loc.

Starr County

Cook, Morris & Arnold No. 2 S.U.C.C., Blk. 23, Porc. 89, R.U.

C. T. Daye No. 1 Seabury, Sh. 5, Porc. 75. Drlg. 326 ft.

Donroy Oil Co. No. 1 Ramon, 2,400 ft. SE line, 150 ft. SW line, sec. 150. Cg. 1,281 ft.

G. Harroun No. 1 Guerra, Blk. 6, Porcs. 55 and 56. Drlg. 1,853 ft.

Transwestern Oil Co. No. 2 Slick, 330 ft. N and E lines, sec. 527. Drlg. 2,542 ft.

Webb County

Bolling & Coffey No. 1 So. Tex. Oil Co., Sur. 768. Loc.

E. Garner No. 1 Saldivar, Blk. 12, Sur. 657, J. V. Borrego Gr. Sd. 1,001-06 ft.; S.O. D.S.T. 1,003-06 ft.; rec. 2 joints of mud and oil.

O. W. Killam No. 1 Laurel Bros., Sur. 333. Sd. 2,029-35 ft.; tstd. 240 ft. oil and blow gas.

Lu-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 26, Porcs. 12, 13 and 14. Drlg. 2,316 ft.

J. W. Magee No. 1 Garcia, Blk. 21, James Subd. R.U.

Mills Bennett Prod. Co. No. 2 Slator, Blk. 89, Mission Subd., Borrego Gr. Drlg. 413 ft.

Ohio Fuel Oil Co. No. 2 D.C.R.C., Blk. 20, Sur. 100. Drlg. 1,261 ft.

Vernor & Carson No. 1 Webster. Sd. 2,-138½-42 ft.; tstg.

Willacy County

Ruez-Morton, Inc., No. 1 F. Armendiaz, C Lot 9, Sh. 4, San Juan de Carricitos Gr. Drlg. 537 ft.

Ruez-Morton, Inc., No. 1 Johnson-Stillman, Lot 14, Blk. 25, Sh. 44, San Juan de Carricitos Gr. S.D. 643 ft.

Shell Pet. Corp. No. 1 Yturria, Sh. 64, San Juan de Carricitos Grant (workover). T.D. 7,662 ft.; to drill deeper; R.U.

Zapata County

H. Guinn Lewis No. 1 S. Benavides, Blk. 39, Villa Gr. Drlg. 1,119 ft.

R. Wheeless No. 1 Welch, Blk. 1, E. K. Bateman Subd. D.&A. 3,017 ft.

Zavalla County

Wilcox O. & G. Co. No. 1 Gillman, sec. 11. Drlg. 2,611 ft.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 2 Maryland Trust Co., 330 ft. N and E lines, Blk. 23. Set csg. 6,652 ft.; W.O.C.

Atlantic Ref. Co. No. 5-B McCampbell, Lot 5, Blk. 49. Drlg. 2,060 ft.

Atlantic Ref. Co. No. 6-B McCampbell, Blk. 49. R.U.

Buckingham Oil Co. No. 2-B McCampbell, Lot 13, Blk. 40. Sd. 7,320-7,400 ft.; S.O. &G.; set csg. 7,440 ft.; perf. csg. 7,350-60 ft.; made S.W.

Buckingham Oil Co. No. 4-A McCampbell, Blk. 41, Orick Sur. Sd. 6,540-48 ft.; set csg. and perf. 6,540-44 ft. and 6,546-48 ft.; sanded up; cleaning in pits.

Buckingham Oil Co. No. 6-A McCampbell, Blk. 41. Drlg. 5,016 ft.

Collins & Broughton No. 1 McCampbell, Lot 5, Blk. 37, McCampbell Subd. Sd. 6,546-58 ft.; set csg. 6,560 ft.; swbd. S.W.

Landreth Prod. Co. No. 1 McCampbell, Lot 4, Blk. 40. Drlg. 5,860 ft.

Rutherford Oil Co. No. 1 Scrivner, 330 ft. NE and NW line, Lot 16. Drlg. 5,910 ft.

Plummer—Bee County

Ann Oil Co. No. 1 Smith, Plummer Chessman Sur. Drlg. 3,011 ft.

Strouch—Bee County

Dirks Bros. No. 2 Strouch, 133-ac. tr., J. M. Uranga Gr. T.D. 4,290 ft.; comp.; 150 B.P.D. on 5/32-in. ck.

Alta Mesa—Brooks County

Standard of Texas No. 4 Mestina, Lse. No. 1. Set sur. csg. 1,200 ft.; W.O.C.

Standard of Texas No. 5 Mestina, Lease No. 1. Set sur. csg. 1,200 ft.; W.O.C.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.

R. B. Byrd No. 1 McGee, J. A. Neal Sur. Drlg. 212 ft.

Eckert & Sons No. 1 Fulps, Comp.; no gauge; top chalk 2,033 ft.; T.D. 2,035 ft.

J. W. Leonard No. 1 White, 800 ft. N Lockhart Townsite. T.D. 2,306 ft.; acidizing.

Taylor Pet. Co. No. 1 Caldwell County, 4-ac. tr., D. Cooper Sur. Drlg. 566 ft.

Whisenant & Trenchard No. 1 Young, J. R. Miller Sur. T.D. 2,225 ft.; R.U. to pmp.

Dunlap—Caldwell County

Kay Oil Co. No. 1 Dunlap, S. Seale Sur. Set csg. 1,928 ft.; W.O.C.

Charamousca—Duval County

N. V. Duncan No. 5 Worden & Draught, Sur. 151. Sd. 1,515-22 ft.; comp.; 65 B.P.D.; T.D. 1,528 ft.

N. V. Duncan No. 6 Worden & Draught, Sur. 151. Drlg. 709 ft.

Magnolia Pet. Co. No. 3 D.C.R.C., Sur. 152. Cg. 1,537 ft.

Colmena—Duval County

J. L. Collins No. 1 D.C.R.C., Blk. 8, sec. 52. Sd. 1,460-67 ft.; tstg.

Conservative Oil Co. No. 2 Brown-Sentz, Blk. 12, sec. 51. Comp.; 8 B.P.H.; sd. 1,468-78 ft.

Conservative Oil Co. No. 3 Brown-Sentz, Blk. 12, sec. 51. R.U.

Wellington Oil Co. No. 5 D.C.R.C., Blk. 10, sec. 51. R.U.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. Drlg. 3,396 ft.

El Mesquite—Duval County

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

Government Wells—Duval County

Magnolia Pet. Co. No. 16 Wilson, Sur. 248. T.D. 2,442 ft.; comp.; 40 B.P.H.

Magnolia Pet. Co. No. 17 Wilson, Sur. 248. Drlg. 1,662 ft.

Southwest Prod. Corp. No. 2 Luptack, SE¼, Sur. 41. R.U.

Hoffman—Duval County

Bridwell Oil Co. No. 3-A Green, Sur. 118. T.D. 2,856 ft.; comp.; no gauge.

Bridwell Oil Co. No. 7-B Hoffman, Sur. 122. Sd. 2,697-2,712½ ft.; comp.; 78 B. P.D. on ½-in. ck.

Gorman & Yoakam No. 1 Hoffman, Sur. 117. Drlg. 1,861 ft.

Standard of Kansas No. 4 Green, Sur. 118. Sd. 2,831-35 ft.; tstg.

Kohler—Duval County

Chiquita Oil Co. No. 1 Peters, 162-ac. tr., Sur. 162. Drlg. wtr. well.

Humble O. & R. Co. No. 1-A Peters, N½, NE¼, Sur. 397. Set csg. on sd. 2,556 ft.; W.O.C.

Labbe—Duval County

Magnolia Pet. Co. No. 3 Labbe, 330 ft. N and E lines, Sur. 221. Sd. 2,863-71 ft.; set csg. 2,912 ft.; W.O.C.

Loma Novia—Duval County

Bridwell Oil Co. No. 8-A Hahl, Blk. 28, Sur. 250. Cg. 2,417 ft.

Eastern Texas Prod. Co. No. 5 Hubbard, Sur. 71. Tstg. sd. 2,572 ft.

F. J. Gravis No. 3 Hahl, Sur. 64. R.U.

F. J. Gravis No. 2 Hahl, SE¼, NE¼, sec. 64. T.D. 2,550 ft.; comp.; 72 B.P.D.

Hamil & Smith No. 5 Ruiz, sec. 41. Drlg. 816 ft.

Humble O. & R. Co. No. 22-B Hubbard, W½, sec. 83. T.D. 2,765 ft.; oil sd.; comp.; 33 B.P.H.

Humble O. & R. Co. No. 27 Ruiz, Sur. 553. T.D. 2,754 ft.; comp.; 11 B.P.H.

Humble O. & R. Co. No. 8 Vela, N½, sec. 42. Set csg. 2,655 ft.; W.O.C.

Magnolia Pet. Co. No. 14 Herbst, sec. 70. R.U.

Ralph Ogden No. 2-A Pure Ruiz, Sur. 41. Comp.; 102 B.P.D.; sd. 2,651-63 ft.

Parr et al No. 2 Hahl, sec. 64. Sd. 2,540-50 ft.; comp.; 72 B.P.D.

Russ Pet. Co. No. 1 Tuck, Sur. 64. D.&A. 2,591 ft.

Texas Co. No. 23 Bishop, N¼, Sur. 57. T.D. 2,582 ft.; comp.; 120 B.P.D.

Texas Co. No. 4-B Ruiz, Sur. 41. Drlg. 109 ft.

Lopez—Webb—Duval Counties

W. C. Billings No. 1 fee, Sur. 2. T.D. 2,-296 ft.; comp.; gasser.

Cox & Hamon No. 10 Peal, NE¼, Sur. 796. Comp.; 12 B.P.H.; T.D. 2,212 ft.

Cox & Hamon No. 11 Peal, NE¼, Sur. 796. Comp.; 288 B.P.D.; T.D. 2,210 ft.

Humble O. & R. Co. No. 14-C D.C.R.C., Sur. 901. Set csg. 2,083 ft.; T.D. 2,084 ft.; comp.; 8 B.P.H.

Humble O. & R. Co. No. 15-C D.C.R.C., Sur. 901. Set csg. 2,089 ft.; comp.; 264 B.P.D.

Humble O. & R. Co. No. 16-C D.C.R.C., Sur. 901. T.D. 2,107 ft.; swbg.

Kepley Prod. Co. No. 1 Billings, NW¼, Sur. 6. Spudded.

C. F. Lewis No. 2 Lopez, sec. 110. Comp.; 22 B.P.H.; T.D. 2,252 ft.

C. F. Lewis No. 13 Lopez, sec. 110. Comp.; 20 B.P.H.; T.D. 2,273 ft.

Mortimer & Springer No. 14-B Lopez, sec. 112. R.U.

Mortimer & Springer No. 26-B Peal, Sur. 794. T.D. 2,206 ft.; comp.; 12 B.P.H.

Mortimer & Springer No. 2 Valadez, Sur. 73. Sd. 2,269-73 ft.; set csg.; W.O.C.

Palangana—Duval County

F. J. Gravis No. 2-A Schallert, Sur. 255. Set sur. csg.; W.O.C.

Penn Palangana Oil Co. No. 3 C. K. Gravis, Sur. 250. Drlg. 717 ft.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 15 D.C.R.C., Sur. 100. Comp.; 200 B.P.D.; T.D. 1,933 ft.

Magnolia Pet. Co. No. 21 D.C.R.C., Sur. 100. Drlg. 1,996 ft.

Sarnosa—Duval County

Bowler & Borsodi No. 1 Sutherland, 80-ac. tr., sec. 126. Drlg. 2,226 ft.

Seven Sisters—Duval County

A. J. Brinkoeter No. 1 Garcia, Sur. 212. Sd. 2,646-56 ft.; S.O.; set csg. 2,639 ft.; R.U. to pmp.

Humble O. & R. Co. No. 8 Dowdy, Sur. 272. Set csg. 2,557 ft.; comp.; no gauge.

Humble O. & R. Co. No. 9 Dowdy, Sur. 272. T.D. 2,553 ft.; comp.; 10 B.P.H. on ¼-in. ck.

Humble O. & R. Co. No. 10 Dowdy, Sur. 272. Drlg. sh. 2,515 ft.

Humble O. & R. Co. No. 13 Dowdy, Sur. 272. Set csg. 325 ft.; W.O.C.

Relience Oil & Roy Co. No. 2 Lichtenberger, S½, sec. 225. D.&A. 2,753 ft.

Texas Co. No. 11 Badgley, Sur. 307. Drlg. 744 ft.

Westheimer & Daube No. 31 Campos, Sur. 224. T.D. 2,717 ft.; comp.; 252 B.P.D.

Westheimer & Daube No. 32 Campos, Sur. 224. Sd. 2,682-2,717 ft.; comp.; 250 B. P.D.

Sweeden—Duval County

Hiawatha O. & G. Co. No. 1 Herberger, 330 ft. S and W lines, sec. 10, Agua Poquita Gr. Sd. 5,875-87 ft.; T.D. 5,896 ft.; swbd. S.W. and S.S.O.; D.&A.

Hiawatha Oil Co. No. 1 Southland, sec. 15, Ball Ranch Subd. Drlg. 2,936 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 8 Halff & Oppenheimer, S. A. Ditch Sur. 1,104 (W.O.). Drlg. L. 8,586 ft.

Slick—Goliad County

Dirks Bros. No. 1 Allen, O. Marshall Sur. Sd. 4,394-4,404 ft.; comp.; est. 125 B. P.D.

Clark—Guadalupe County

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. Spudded.

Kenedy & Crowley No. 1 Johns, Davis Sur. T.D. 2,507 ft.; completing.

D. Mulholland No. 1 Johns, J. K. Davis Sur. Spudded.

Darst Creek—Guadalupe County

J. E. Clark No. 1 Anderson, 8 mi. W of Seguin. Cg. 1,926 ft.

Diamond Halff Oil Co. No. 1 Bibbs, Robinson Sur. Top Edwards 2,852 ft.; drlg. 4,896 ft.

Freeman Oil Co. No. 3 Larrison, G. DeWitt Sur. T.D. 2,700 ft.; dry; P.B. 2,450 ft.; W.O.C.

Riddle Oil Co. No. 1 Williams, G. DeWitt Sur. R.U.

Saxet Prod. Co. No. 1 Wilson, G. DeWitt Sur. Top chalk 2,398 ft.; comp.; 160 B.P.D.

Saxet Prod. Co. No. 2 Wilson, G. DeWitt Sur. No. 13. Drlg. plugs in chalk.

V. G. Schimmel No. 2 Grimm, DeWitt Sur. T.D. 2,525 ft.; set csg. 2,383 ft.; W.O.C.

T. Staats No. 1 Wilson, G. DeWitt Sur. Comp.; no gauge.

W. D. Walton No. 1 Hoffman, DeWitt Sur. 11. Comp.; 540 B.P.D.; T.D. 2,482 ft.; (W.O.).

Watson No. 1 DeLancey, 400-ac. tr. Set csg. in chalk; drlg. plugs.

Nolte—Guadalupe County

Riddle Oil Co. No. 1 Herff, Gortari Sur. No. 76. T.D. 2,160 ft.; set csg. on 100-ft. sat. chalk; drlg. plug.

Riddle Oil Co. No. 2 Nolte, Lowell Sur. 16. Cg. 1,967 ft.

Wheelock & Collins No. 1 Warnecke, 335-ac. tr. R.U.

LaBlanca—Hidalgo County

Gulf States Oil Co. No. 3 Engleman, Lot 3, Blk. 70, Las Mestanas Gr. (workover). T.D. 8,123 ft.; set csg. on bottom; perf. 8,016-21 ft. and 8,024-34 ft.; no shows; D.&A.

Sterling O. & R. Co. No. 1 Engleman, 660 ft. N and E lines, Lot 8, Blk. 95. Sd. 7,984-8,012 ft.; S.G.&O.; set 7-in. csg. 7,984 ft.; drlg. plugs.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande, Tr. 2,309, Blk. 59 (workover). Perf. csg. 7,481-91 ft.; P.B. 7,592 to 7,-513 ft.

Samfordyce—Hidalgo-Starr Counties

Cosmo Petroleum Co. No. 1 Guerra, Sh. 254, Porc. 40. Perf. 2,764-69 ft.; comp.; gasser.

Sun Oil Co. No. 1 Chapitol, Porc. 99. T.D. 2,040 ft.; P.B. 1,300 ft.

Val-Tex Oil Co. No. 2 Chapa, Tr. 250, Porc. 39. Set csg.; T.D. 3,008 ft.; perf. 2,944-46 ft.; stdg.

Young & Bonnear No. 1 Diaz, Tr. 331, Porc. 40. Cg. 1,863 ft.

Alworth—Jim Hogg County

French Oil Co. No. 3 Garza, Blk. 1, Sur. 261. Sd. 1,041-48 ft.; tstd. gas and S.W.; drlg. 1,060 ft.

Bentonville—Jim Wells County

Tom Graham No. 2 Luby, Share 4, Los Presnos de Abajo Gr. Perf. 4,025-40 ft.; D.&A.; T.D. 4,043 ft.

LaJita Co. No. 3 Pope, sec. 20. Loc.

Texon Drlg. Co. No. 2 Ralston, 990 ft. N line, 330 ft. W line, sec. 17. Loc.

West Premont—Jim Wells County

Diamond Halff Oil Co. No. 1 Cuppia Lots 119 and 122, sec. 76. Drlg. 1,061 ft.

Diamond Halff Oil Co. No. 1 Peterson, Lots 104 and 105, sec. 76. Sd. 2,246-60 ft.; set csg. 2,262 ft.; comp.; gasser; slight spray oil on ⅜-in. ck.

Diamond Halff Oil Co. No. 1 Thirkel, Lots 66 and 79, sec. 77. Drlg. 1,511 ft.

C. G. Glasscock No. 1 Ritter, Lot 45, Halde-

man Subd., sec. 76. W.O.; set csg. 3,306 ft.; W.O.C.
Gouger & Mode No. 1 Bennett, Lots 55 and 58, Haldeman Subd., sec. 76. Sd. 2,244-59 ft.; set csg.; W.O.C. sec. 76. Loc.
Tom Graham and Gilcrease No. 3-B Bennett, Sur. 76. Set sur. csg.; W.O.C.
Henshaw Bros. No. 1 McGuffin, W½, sec. 230, R.U.
Sloan & Cogswell No. 2 Nash, Lot 118, sec. 76. Drlg. 1,916 ft.

Sandia—Jim Wells County

O. W. Killam No. 1-B Wade, Lopez de Jean Gr. Comp.; no gauge.

Kingsville—Kleberg County

Humble O. & R. Co. No. 9 Kleberg, Lot 2, sec. 40. Drlg. 2,927 ft.

Oakville—Live Oak County

Simmons O. & G. Co. No. 1 McGriff, 150 ft. S and E lines, 94-ac. tr., Romero Sur Set sur. csg. 162 ft.; W.O.C.

Calliham—McMullen County

Loma Oil Co. No. 4-B Jacobs, G.H.&H. Sur. 15. Comp.; no gauge; T.D. 1,055 ft.

Agua Dulce—Nueces County

Stoddart & Moss No. 1 Colman, 330 ft. NW and NE lines, SE¼ SW 330-ac. tr., sec. 206. S.D. 6,885 ft.; blew out and closed in; to attempt comp. through drill stem; S.D.
Texon Drlg. Co. No. 2-B Sevier, 880-ac. tr., W. W. Chapman Lds., Palto Alto Gr. Set 16-in. csg. 300 ft.; T.D. 6,350 ft.; set csg.; pmpg. mud to kill wild No. 2; T.D. 6,465 ft.
United Prod. Co. No. 1 Harvey, 1,100 ft. W line, 1,050 ft. N line, tr., M. Garza Sur. Oil sd. 7,382-95 ft.; cap. 7,396-98 ft.; top S.W. sd. 7,398 ft.; drlg. 7,721 ft.
J. P. Walker et al No. 2 Ingram, Blk. 8, sec. 6, Ross Peters Subd. Drlg. sh. 3,-421 ft.

Baldwin—Nueces County

Heyser & Heard No. 1 Kosar, 152-ac. tr., M. J. Cody Sur. Drlg. 2,856 ft.

Chapman Ranch—Nueces County

Seaboard & Allen No. 1-B Chapman, 1,980 ft. N line, 660 ft. W line, sec. 37. Cg. 4,863 ft.
Seaboard & Allen No. 3 Chapman, 1,650 ft. W line, 330 ft. S line, sec. 38. Sd. 5,044-56 ft.; set csg. 5,051 ft.; comp.; 4.5 B.P.D.; T.P. 800 lbs.

Clara Driscoll—Nueces County

Houston Oil Co. No. 1 Sevier, 330 ft. S and W lines, 77.1-ac. tr., Quadrilla Irr. Co. Sur. Loc.
Magnolia Pet. Co. No. 2 Sevier, 330 ft. S and W lines, 80-ac. tr., R. Russell Sur Sd. 5,439-42 ft.; tstd. S.W.; drlg. 5,-521 ft.

Flour Bluff—Nueces County

Humble O. & R. Co. et al No. 2 Cordz, Lot 13, Blk. 48. Set csg. 6,650 ft.; W.O.C.
Humble O. & R. Co. et al No. 2 Golden, Lot 19, Blk. 47. Drlg. sd. 6,636 ft.
Humble O. & R. Co. No. 2-B Miller, Blk. 21, sec. 48. Drlg. sh. 1,050 ft.
Humble O. & R. Co. et al No. 4-A Miller, Lot 19, Blk. 56. Drlg. sh. 4,587 ft.
Humble O. & R. Co. et al No. 2-A Solar Sevier, Lot 14, Blk. 47. T.D. sd. 6,655 ft.; set csg.; W.O.C.
Humble O. & R. Co. et al No. 3 Webster, Blk. 26, sec. 48. T.D. sd. 6,649 ft.; set csg.; W.O.C.

London—Nueces County

Cosner & Cosner No. 1 Stockton, 330 ft. N and E lines, SW¼, NE¼, sec. 25. Perf. 4,703-19 ft.; making S.W.
Crown Central Pet. Corp. No. 1 Stockton, 330 ft. S and E lines, NW¼, NE¼, sec. 25. Drlg. 1,145 ft.
Gem Oil Co. No. 1 Stockton, 330 ft. N and W lines, SE¼, NE¼, sec. 25. Sd. 4,551-56 ft.; tstd. S.W.; D.S.T. 4,716-23 ft.; rec. 250 ft. P.L.O.; set csg.; W.O.C.

Saxet Heights—Nueces County

W. C. Brady No. 1 Hartley, 4-ac. tr., Ellendale Gardens Subd. Sd. 4,070-89 ft.; comp.; 275 B.P.D. on ⅞-in. ck.
Harrison Drlg. Co. No. 1 Simms, 4-ac. tr., Villareal Sur. T.D. 4,097 ft.; P.B. and sdtrkd. 3,928 ft.; set csg. in sdtrkd. hole 4,089 ft.; W.O.C.
Potter P. L. Co. No. 5 Cohen, 15-ac. tr., Villareal Sur. Perf. 4,075-80 ft.; comp.; 35 B.P.D. on ⅞-in. ck.
Ben F. Smith No. 1 Snowden, 13-ac. tr., Villareal Sur. R.U.
Taylor Pet. Corp. No. 2 Kaler, 10-ac. tr., Villareal Sur. Drlg. 4,116 ft.
S. E. Wilson No. 1 Wagenschein, C Lot 57, Country Club Pl. Perf. 4,074-78½ ft.; comp.; 104 B.P.D. on ⅞-in. ck.

Saxet—Nueces County

Baltic Drlg. Co. No. 4 Harmon, Sur. 416. Drlg. 6,123 ft.
Benson Drlg. Co. No. 1 Morgan, 330 ft. N and W lines, 40-ac. tr., Sur. 315 (W.O.). Old T.D. 4,483 ft.; R.U. to D.D.
Bentex Oil Co. No. 5 Harmon, 330 ft. S and W line, 50-ac. tr., Sur. 416. Cg. 6,697 ft.
R. B. Bryant No. 6 Frank, Sur. 416. T.D. 6,650 ft.; P.B. to sdtrk. 4,000 ft.; drlg. ahead.
Conservative Oil Co. No. 3-B Morgan, Sur. 403. Oil sd. 6,914-28 ft.; set csg. 6,928 ft.; perf. 6,750 ft.; S.W.; perf. 4,048-52 ft.; recmtg.
A. D. Corgey No. 1 Page, 330 ft. S and E lines, 20-ac. tr., Sur. 716. Drlg. 6,467 ft.
Donico Prod. Co. No. 2 Dounigan, 330 ft. W line, 2,004 ft. S line, 80-ac. tr., sec. 7, Rge. 6, Kinney Lds. Sd. 4,854-60 ft.; set csg.; W.O.C.
Gilcrease Oil Co. No. 3 Gallagher, 140-ac. tr., Thos. Gallagher Sur. Set sur. csg. 150 ft.; W.O.C.
L. Glasscock No. 2 Johns, 20-ac. tr., MacGregor Sur. 582. M.I.M.
L. Glasscock No. 3 Hunter, 990 ft. N line, 330 ft. W line, 160-ac. tr., Dunn Sur. 312. Perf. 4,861-63 ft.; washing in.
Tom Graham No. 3 Harmon, 20-ac. tr., Sur. 416. Drlg. 5,127 ft.
Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311. D.S.T. 6,318-26 ft.; recd. 1,000 ft. oil, 90 ft. S.W.; sd. 6,208-26 ft.; set csg. 6,326 ft.; cleaning into pits.
Great States and Violet No. 9 McGregor-Belk, 73.6-ac. tr., sec. 311. M.I.M.
W. H. Harrison Drlg. Co. No. 1 Taggert, 50-ac. tr., Sur. 401. T.D. 5,160 ft.; S.D.; W.O.O.
Hiawatha Oil Co. No. 8 Hutchins-Stillwell, Lot 30, Sheppard Farm Lds. Set sur. csg.; W.O.C.
Hiawatha Oil Co. No. 9 Hutchins-Stillwell, Lot 34, Sheppard Lds. Perf. 5,762-68 ft.; made gas and dist.; drlg. 6,637 ft.
Hiawatha Oil Co. No. 4-B Smith, Sheppard Farm Lot 35. R.U.
Houston Oil Co. No. 2 fee, Sur. 582. Tstg. sd. 5,306 ft.
Houston Oil Co. No. 21 Morgan, sec. 7, Rge. 5. Drlg. plugs 4,423 ft.
Houston Oil Co. No. 22 Morgan, sec. 7, Rge. 5. Drlg.
H. H. Howell No. 3 Hutchins, 80-ac. tr., Sur. 416. Perf. 5,732-42 ft.; comp.; no gauge.
H. H. Howell No. 1 R. Morgan, Blk. 3, Roberts Subd., Sur. 415. Sat. sd. 6,735-42 ft.; set csg.; comp.; 120 B.P.D. on ¼-in. ck.; perf. 5,746-56 ft.
H. H. Howell No. 2 Morgan, Blk. 3, NW¼, Sur. 415. Sd. 4,850-65 ft.; comp.; no gauge.
Kepley Prod. Co. No. 3 Donigan, 100-ac. tr., sec. 7, Rge. 5. Cg. sd. 4,413 ft.
Maryland Corp. No. 1 Carson, 7-ac. tr., Sur. 416. O.W.W.O.; old T.D. 5,843 ft.; cg. 6,686 ft.
Morgan & Chapman Minerals No. 6 Morgan Clark, NE¼, Sur. 405. P.B. 3,500 ft.; drlg. sdtrkd. hole 4,137 ft.
North Star Oil Co. No. 10 Rand Morgan, 80-ac. tr., Sur. 405. Drlg.
Pan American Prod. Co. No. 5-C Morgan, E½, SW¼, Sur. 405. Cg. 5,857 ft.
Pan American Prod. Co. No. 2 Solar Sevier, Sur. 582. Drlg. 4,156 ft.
Perry & Reed No. 1 fee, 30.4-ac. tr., Villareal Gr. T.D. 6,642 ft.; D.&A.
Port O. & G. Co. No. 3 Cox & Cryder. Drlg. 3,050 ft.
Potter & Snowden No. 1 Kocurek, 26-ac. tr., Sur. 25. Drlg. 3,256 ft.
Potter & Snowden No. 1 Taggert, Blk. 5, Sur. 401. Set csg. 1,000 ft.; W.O.C.
Renwar & Maryland No. 1-A Rand Morgan, Sur. 415. O.W.W.O.; R.U. to deepen; old T.D. 5,825 ft.
Republic Nat. Gas Co. No. 3-A Morgan, sec. 405. Drlg. 1,780 ft.
Richardson Pet. Co. No. 7 Cain & Secrist, Blk. 23, Russell Farm Lots. Sd. 4,425-33 ft.; set csg.; drlg. plug.
Richardson Pet. Co. No. 9 Cain & Secrist, Blk. 23, Russell Farm Lots. Sd. 4,454-60 ft.; set csg.; cleaning.
Richardson Pet. Co. No. 3 Erigan, 10-ac. tr., Sur. 311. Sd. 5,821-31 ft.; set csg. 5,831 ft.; W.O.C.
Richardson Pet. Co. No. 1 Erwin, 5.8-ac. tr., Sur. 500. Sd. 5,826-37 ft.; comp.; no gauge.
Richardson Pet. Co. No. 9 Quiros, Blk. 36, Sheppard Lots. Drlg. 5,026 ft.
Southern Minerals Corp. No. 5 Mastin, Sur. 416. Sd. 6,887-97 ft.; D.S.T. 6,907-21 ft.; rec. 1,500 ft. P.L.O. in 15 min.; set csg.; completing; making 90% oil on ¼-in. ck.; T.D. 6,921 ft.
Southern Minerals Corp. No. 13 Smith, Blk. 4, Sheppard Trs. Set csg. 4,550 ft.; W.O.C.
Stamex O. & G. Co. No. 1 Cox & Cryder, lse., Surs. 166 and 316. O.W.W.O.; old T.D. 4,643 ft.; P.B. to sdtrk. 2,500 ft.
Texon Drlg. Co. No. 5 Vance, Thos. Gallagher Sur. T.D. 7,000 ft.; sdtrkd. 6,-400 ft.; sd. 6,914-20 ft.; tstg.

Stratton—Nueces County

Camp Prod. Co. No. 1 Wordner, 330 ft. E line, 1,280 ft. N line, sec. 12, Stratton Subd. Cg. sh. 6,127 ft.

Sullivan—Nueces County

Invincible Oil Co. No. 1-B Elliff, 406 ft. S and W lines, 160-ac. tr., Longorio Gr. Drlg. 5,661 ft.

Plymouth—San Patricio County

Magnolia Pet. Co. No. 5 Corpus Christi Bank, sec. 24, Fourth Addn. Drlg. 2,-016 ft.
Magnolia Pet. Co. No. 12 C. C. Bank, 466 ft. N and E lines, Fessenden Sur. Drlg. 4,020 ft.
Plymouth Oil Co. No. 70-C Welder, sec. 71. T.D. 5,643 ft.; set csg.; W.O.C.
Plymouth Oil Co. No. 72-C Welder, 8,411 ft. S line, 797 ft. E line, sec. 71. Sd. 5,602-19 ft.; set csg.; W.O.C.

Taft Field—San Patricio County

Cage Prod. Co. No. 7 Mayo, 9,560 ft. W line, 990 ft. S line, 60-ac. tr., Ottman Sur. Sd. 4,360-68 ft.; tstg.
Esves Oil Co. No. 4 Britton, Lot 8, sec. 6, Third Addn. Set csg. 4,008 ft.; S.D.
Esves Oil Co. No. 7 Britton, sec. 6. Drlg. 1,816 ft.
Humble O. & R. Co. No. 1 Blaschke & Mayo, Lot 8, sec. 25. Drlg. sd. 6,195 ft.
Humble O. & R. Co. No. 19 Mayo, Ottman Sur. Set csg. 4,929 ft.; W.O.C.
Shell Pet. Corp. No. 6 Pullin, sec. 1, Second Addn. R.U.

Ricaby—Starr County

Moss & Heard No. 3 Ricaby, Porc. 83, J. of Camargo. Sd. 1,604-11 ft.; tstd. oil and mud; set csg. 1,602 ft.; W.O.C.

Barbacoas—Starr County

K. E. Merren et al No. 1 S.C.C.C., Blk. 34, Porc. 89. T.D. 5,380½ ft.; sd. 5,377-80½ ft.; high pressure; killing well.

Los Olmos—Starr County

H. C. Owens No. 1 Ivey, Porc. 87. R.U.
Ted Stone No. 1 Kelsey-Bass, Porc. 87, J. of Camargo. Set 6-in. csg. 393 ft.; S.D.

Rio Grande City—Starr County

Clopton & Reed No. 1 Green, Porc. 80. T.D. 4,600 ft.; S.G.; P.B. 1,681 ft.; set csg.; W.O.C.
Clopton & Reed No. 4 Tijerina, Lot 12, Sh. 14-C, Porc. 80. Cg. 1,423 ft.

Aviator—Webb County

Joe Palmer No. 1 Garcia, Sur. 463. R.U.

Cole—Webb County

O. W. Killam No. 49 Bruni, Blk. 5, Sur. 3. T.D. 2,958 ft.; comp.; 50 B.P.D.
O. W. Killam No. 50 Bruni, C Blk. 10, Sur. 8, Foltz Subd. Skidded over; drlg. 2,808 ft.

O'Hern—Webb County

Hamil & Smith No. 24 Benavides, Blk. 502, Hale Subd. T.D. 2,945 ft.; comp.; 200 B.P.D.
Hamil & Smith No. 2 Bruni, Sur. 2213. Set csg. on sd. 2,936 ft.; comp.; 100 B.P.D.
O. W. Killam No. 50 Bruni, C Blk. 10, Sur. 8. Sd. 2,448-55 ft.; tstd. oil, gas and S.W.
Magnolia Pet. Co. No. 19 Benavides, Hale Subd. Drlg.
Magnolia Pet. Co. No. 23 Benavides, Blk. 1, O'Hern & Seacord Subd. Drlg. 2,-957 ft.
H. M. Reed No. 4 Benavides, Blk. 299, Hale Subd. Swbg. 2,916 ft.
Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173. M.I.M.
Sun Oil Co. No. 6-A Benavides, Blk. 377. Drlg. 1,220 ft.
Texas Co. No. 5-A Benavides, Blk. 375. T.D. 2,913 ft.; comp.; 30 B.P.D.

LaSal Vieja—Willacy County

Shell Pet. Corp. No. 1 Yturria, Sh. 64, Carricitos Gr. (W.O.); set csg. 7,630 ft.; cg. sh. 8,399 ft.

Byersville—Williamson County

Taylor Ref. Co. No. 7-B Heap, H. White Sur. Spudded.

Charco Redondo—Zapata County

W. C. Bob No. 2 Martinez, S¼, Blk. 22, Quandado Gr. Sd. 670-72 ft.; set csg.; M.I.R.

Cuellar—Zapata County

Magnolia Pet. Co. No. 5 Cuellar, Sur. 245. Set sur. csg.; W.O.C.
Magnolia Pet. Co. No. 2 Gonzalez, Cerrito Blanco Gr. Spudded.

Escobas—Zapata County

Sam Evans No. 2 Garcia, Blk. 19, Douglas Subd. Comp.; 20 B.P.D.; T.D. 1,-341 ft.
Sam Evans No. 3 Garcia, Blk. 19, Douglas Subd. R.U.
E. Calloway No. 2 Bustamente, Sh. 35, Fansler Part. Cg. 1,123 ft.
E. Calloway No. 5 Garcia, Sh. 3, Fansler Part. Completing 1,043 ft.
Texas Co. No. 98 Jennings, Cerrito Blanco Gr. Drlg. sdy. sh. 293 ft.
Zapata Corp. No. 1 Garza, Blk. 22, Douglas Subd. Cg. 1,223 ft.

Haynes—Zapata County

Valley Osage Oil Co. No. 2 Haynes, Blk. 14, Haynes Subd. Comp.; 30 B.P.D.; T.D. 1,138 ft.

Lopena—Zapata County

Dalport Oil Corp. No. 1 Vela, Porc. 20. Drlg. 312 ft.
Wm. H. Winn No. 2 Vela, Blk. 6, Porc. 20. Cg. 2,221 ft.

E. C. TEXAS WILDCATS

Anderson County

American Liberty Oil Co. No. 1 G. E. Gauge, Blackfoot area, B. Gilbert Sur. Top Paluxy 6,758 ft.; top Glenrose 7,029 ft.; drlg. 7,890 ft.
Tide Water Oil Co. et al No. 7 Monnig, S. Sanchez Sur., deep test, Long Lake field. Coring 8,747 ft.

Angelina County

Hicks et al No. 1 Morris, J. Morris Sur., 3 mi. E of Dibol. S.D. 2,186 ft.; pipe stuck.
B. F. Hoffman No. 1 So. Pine Lbr. Co., B. J. Thompson Sur., C of SE¼ of Blk. 11, NE of Dibol. Fsg. 2,236 ft.
W. Sandler No. 1 B. L. Collins, 150 ft. S and 425 ft. W of D. W. Welch Sur. S.D. 1,460 ft.

Bowie County

Thompson & Jaffie No. 1 R. Rosalind, J. Milam Sur., 3 mi. SW of Redwater. Drlg.

Cherokee County

J. G. Mayo Oil Co. No. 1 J. E. Bailey in J. H. Russell Sur., 2½ mi. W of Lone Star. Drlg. 1,735 ft.

Falls County

H. H. Bell et al No. 1 A. Garrett, J. M. Sanches Sur. M.I.R.
A. H. Bell et al No. 1 C. L. Trice, F. Mayham Sur., 1 mi. E of Lott. S.D. 1,220 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. S.D. 2,810 ft.
Moore & Scarborough No. 1 Fuller. Drlg. 2,826 ft.

Freestone County

C. F. Lytle No. 1 R. Simmons, 23-ac. tr., R. B. Loughbotham Sur., 1 mi. S of Wortham. S.D. 2,340 ft.
Stroude et al No. 1 P. Mullens, R. D. Sloan Sur., 6 mi. NE of Fairfield. Spudded.

Henderson County

Tide Water et al No. 1 McElreath & Suggett. Austin 3,710-4,110 ft.; top Woodbine 4,137 ft.; top Georgetown 4,990 ft.; top Paluxy 6,005 ft.; top Glenrose 6,270-80 ft.; drlg. 6,505 ft.

Hopkins County

W. P. Chandler et al No. 1 J. M. Hargroves, 330 ft. S and W of 20-ac. lse. in G. Linceum Sur., 10 mi. SW of Sulphur Bluff. Loc.
Rio Oil Co. No. 1 R. A. Logan, A. Wetmore Sur. Drk.

Houston County

American Liberty Oil Co. No. 1 Bean, A. Evans Sur., NW of Grapeland. T.D. 6,-257 ft.; made 10,000,000 to 15,000,000 ft. gas; killing to reperf.
Placid Oil Co. No. 1 Elliott in J. Procella Sur., 5½ mi. NE of Grapeland. Coring 6,075 ft.

Hunt County

Penn Oil Corp. No. 1 R. B. Parish, C 100-ac. tr., N. Dauley Sur., 7 mi. NE of Lone Oak. Pecan Gap 1,387-1,477 ft.; elev. 595 ft.; drlg. 2,636 ft.
Stanolind O. & G. Co. No. 1 J. P. Hawks, 2,400 ft. from S and 2,300 ft. from N line of R. Ragsdale Sur. and in SW cor. of 110-ac. tr., near Campbell.; M.I.M.
Texola Land Corp. No. 1 J. M. Goin, Jas. Merrick Sur., 2 mi. SW of Wolfe City. S.D. 40 ft.

Kaufman County

Scott & Woodside No. 1 W. and T. Nash, in J. Cortez Sur., 1 mi. E of Scurry. R.U.

Lamar County

Lowery-Cutler No. 1 E. C. Porter, Thos. King Sur. Top Georgetown 354 ft.; S.D. 1,647 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. S.D. 3,695 ft.
Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. Drlg. 1,638 ft.

Red River County

Roy I. Carter Drlg. Co. No. 1 J. A. Tutt, C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. Drlg. 428 ft.

Van Zandt County

Humble O. & R. Co. No. 1 L. K. Riggs, W. Daniels Sur. Deep test; top Woodbine 3,230 ft.; top Georgetown 3,725 ft.; drlg. 4,237 ft.
Stroud & Lowe No. 1 P. L. McNeill, J. W. Guest Sur., 4 mi. N of Ben Wheeler S.D. 684 ft.

Wood County

B. F. Phillips No. 1 L. E. Pritchard, T. Craddock Sur., 4 mi. S of Winnsboro Pecan Gap 2,836-3,080 ft.; drlg. 4,569 ft.
Robertson et al No. 1 E. A. Russell, in J. A. DeLap Sur., 5 mi. S of Alba, is old G. W. Nix well. T.D. 600 ft.; C.O.

EAST TEXAS

(Border Counties)

Bowie County

Chew & Bassett No. 1 Byron, Barkman Sur., 10 mi. W of Texarkana. 12-in. set 64 ft.; loc. abd.
Ferguson & Hill No. 1 Breckenridge, N. Dysas Sur. S.D. 2,605 ft. fuel. cor.
Sutton-Hawkins No. 1 McDuffey, John Ball Sur. T.D. 5,020 ft.; fsg. for D.S.
Thompson & Jaffee No. 1 Rosemond, J. Milan Sur. Drk.

Cass County

American Liberty No. 1 B. E. Echlos, H. Holbert Sur. Drlg. 4,900 ft.
Arkansas-Louisiana No. 1 George, Wm. R. Myers Sur. Drlg. 2,100 ft.
Gulf Oil No. 4 Dawson, J. H. Rives Sur., NW cor. lse. Comp.; flw. 294 B.P.D.; T.D. 6,006 ft.
P. L. Hoffman No. 3 Davis, J. S. Smith Sur. Drlg. 3,100 ft.
Magnolia No. 3 Allday Est., P. Evans Sur. Drlg. 5,530 ft.
Magnolia No. 11 J. E. George, John Collum Sur. Drlg. 4,739 ft.
Magnolia No. 13 J. E. George, John Collum Sur. Drlg. 3,733 ft.
Magnolia Pet. No. 3 W. M. Hall, Wilson Robinson Sur. Drk.
Magnolia No. 1 Hayer & Thatcher, Jacob Carsner Sur. Drlg. 5,774 ft.
Magnolia No. 9 L. Haywood, P. Evans Sur., SE cor. Drlg. 5,368 ft.
Magnolia No. 10 L. Haywood, SW cor. lse., P. Evans Sur. Drlg. 5,597 ft.
Magnolia No. 11 L. Haywood, SE cor. P. Evans Sur. Drlg. 5,286 ft.
Magnolia Pet. Co. No. 12 L. Haywood, P. Evans Sur. Drlg. 5,469 ft.
Magnolia Pet. Co. No. 13 L. Haywood, P. Evans Sur. Drlg. 4,925 ft.
Magnolia No. 6 W. M. Hall, John N. Jackson Sur. 10-in. cmt. 240 ft.
Magnolia Pet. Co. No. 5 Lewis and Wicks, Comp.; flw. 12 B.P.H.; T.D. 6,080 ft.
Magnolia Pet. Co. No. 8 Lewis and Wicks, Alex. Archer Sur. Drlg. 6,011 ft.
Magnolia Pet. Co. No. 1 J. B. McLeod, Cass Co. Sch. Ld. Sur., NW cor. sur. Loc.
R. W. Norton No. 2 Davis, H. Holbert Sur., NE cor. Comp.; flw. 520 B.P.D.; T.D. 6,000 ft.
R. W. Norton No. 3 Davis, H. Holbert Sur. T.D. 6,000 ft.; 7-in. cmt. 5,970 ft.; W.O.C.S.
R. W. Norton No. 6 Davis, H. Holbert Sur. 13-in. cmt. 254 ft.

R. W. Norton No. 7 Davis, H. Holbert Sur. 13-in. cmt. 252 ft.
Ohio Oil Co No. 13 R. P. Willis, S.F.I.W. Sur. No. 1,263. Drk.
Ohio Oil Co. No. 16 R. P. Willis, S.F.I.W. Sur. 1263. Rng. 7-in.; T.D. 5,958 ft.; tstg.
Ohio Oil Co. No. 17 R. P. Willis, S.F.I.W. Sur. No. 1263. Drlg. 5,761 ft.
Phillips Pet. Co. No. 8 Farrier, Wm. R. Myrs Sur. Comp.; flw. 444 B.P.D.; T.D. 6,088 ft.
Texas Co. No. 8 McLeod, W. A. Elliott Sur. Rng. 7-in.; T.D. 6,110 ft.
Texas Co. No. 2 N. A. Rambo, Cass Co. Sch. Ld. Sur. Cg. 6,083 ft.
Texas Co. No. 5 N. A. Rambo, Cass Co. Sch. Ld. Sur. 7-in. cmt. 6,070 ft.; T.D. 6,093 ft.; W.O.C.S.
Texas Co. No. 7 N. A. Rambo, Cass Co. Sch. Ld. Sur. Drlg. 5,084 ft.
United Prod. Co. No. 1 Allday, P. Evans Sur. Drlg. 5,050 ft.
United Prod. No. 6 Baugus Unit, R. Trammel Sur. Loc.; M.I.M.
United Prod. No. 1 Belote, H. Holbert Sur. Drlg. 4,168 ft.
United Prod. No. 1 Bivens, John Collum Sur. Drlg. 5,068 ft.
United Prod. Co. No. 2 Bivens Unit, Jas. Davenport Sur. T.D. 6,021 ft.; S.D. W.O.
United Gas No. 3-A J. A. Bewley, H. Holbert Sur. Drlg. 3,111 ft.
United Prod. No. 4 J. A. Bewley, H. Holbert Sur. 7-in. cmtd. 5,960 ft.; T.D. 6,000 ft.
United Prod. Co. No. 1 Bostick, J. Coleman Sur. Compx gas well 16,000,000 ft.; T.D. 5,684 ft.
United Prod. Co. No. 1 Davis Unit, Cass Co. Sch. Ld. Tstg. gas only; T.D. 5,732 ft.; W.O.
United Gas No. 4 Bivens Unit, J. Davenport Sur. Comp.; flw. 16 B.P.H.; T.D. 5,986 ft.
United Prod. No. 2 J. Q. Clements, Wm. B. Hughes Sur. Loc.
United Prod. Co. No. 1 Kate, Spell Unit, C. C. Sch. Ld. Sur. 9-in. cmt. 2,380 ft.; W.O.C.S.
United Prod. Co. No. 1 J. W. Land, R. Potter Sur. 7-in. cmt. 6,546 ft.; T.D. 6,564 ft.; W.O.C.S.
United Prod. No. 1 R. O. Long, W. Robinson Sur. Drlg. 5,297 ft.
United Prod. Co. No. 1 J. D. Parker, J. Coleman Sur. Comp.; flw. 6,000,000 ft. gas; T.D. 5,695 ft.
United Prod. No. 1 Terry Unit, R. Potter Sur. T.D. 5,660 ft.; tstg.; gas well.
United Prod. No. 4 S. B. Willis, W. Robinson Sur. Comp.; flw. 16 B.P.H.; T.D. 6,035 ft.
United Prod. No. 5 S. B. Willis, W. Robinson Sur. Comp.; flw. 16 B.P.H.; T.D. 6,025 ft.
Vaughn Prod. Co. No. 1 Willis, S.F.I.W. Sur. 1263. Drlg. 5,760 ft.

Harrison County

H. H. Alvord et al No. 1 M. A. Flannagan, L. Wormack Sur. T.D. 2,440 ft.; W.O. S.R.
Gever Oil Co. No. 1 Moore, Fields Sur. R.U.
Gever Oil Co. No. 2-B Vincent, Davenport Sur. T.D. 2,135 ft.; S.D.
Highway 80 Oil Co. No. 1 George Powell Sur. T.D. 825 ft.; S.D.
Midfield Oil Co. No. 1 Lane & Greer, Baker Sur. T.D. 2,338 ft.; reacidized and tstg.
Patsam Oil Co. No. 2 Z. Douglas, S. Fields Sur. T.D. 2,520 ft.; tstg.

Marion County—Rodessa

Arkansas-Louisiana No. 1 C. C. Braden, T. Hanson Sur. M.I.M.
Arkansas-La. No. 1 W. S. Ford, Charles Grayson Sur., NE cor. Ford 204-ac. tr. T.D. 6,181 ft.; flw. and tstg.
Arkansas-La. No. 1 Laura McIntosh, Edmondson Sur. T.D. 6,101 ft.; tstg. dry; renerf.
Bauman, Dunn & Fischer No. 1 Chatten, A. D. S. Cov Sur., SE cor. Comp.; T.D. 5,956 ft.; 6,000,000 ft. gas.
Cemo Oil Co. No. 1 Lucas, A. Castleberry Sur., Caddo field. T.D. 1,125 ft.; D.&A.
F. R. Freet et al No. 1 Barnham, R. Potter Sur. Drk.
Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E. cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S, 3,450 ft. E of NW cor. of R. Bennington Sur. T.D. 5,996 ft.; tstg. with various size cks.; flw.
Hunter Co. No. 1 E. W. Fonda, A. D. S. Cov Sur. Drlg. 300 ft.
Morefield & Prine No. 1 Bennington, R. Potter Sur. T.D. 940 ft.; W.O.S.R.
Morefield & Prine No. 2 Potter, R. Potter Sur. T.D. 960 ft.; W.O.S.R.
Morefield & Prine No. 2-B Potter, R. Potter Sur. Drk.

Panola County

Danciger O. & R. No. 1 Tatum, A. Bissell Sur. R.U.
R. H. Dearing & Sons No. 1 Wooten Est., W. Mann Sur. R.U.
Magnolia Pet. Co. No. 2 E. A. Hull, Thos. Applewhite Sur. Drlg. 3,655 ft.
Logansport P. L. Corp. No. 1 Rushing, M. Smith Sur. T.D. 2,920 ft.; shows oil; rng. liner.
Matex Oil Co. No. 1 Thomas M. Alstone, 3 mi. E of Elysian field. T.D. 6,175 ft.; D.&A.

Shelby County

Mulrov-Curtain et al No. 1 Hayden, D. G. Yordt Sur. T.D. 3,200 ft.; S.D.; W.O.; (cor.).
Potter & Rombley No. 1 Polly. T.D. 4,070 ft.; D.&A.
Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. S.D. 2,165 ft.; laying fuel line and prep. to D.D.
H. A. Stebbinger No. 1 Pickering Lbr. Co., on 160-ac. tr. in A. Hanson Sur. Drlg. plug and prep. test shows oil and gas: T.D. 5,052 ft., cor.; fsg. for 1,500 D.P.

NORTH TEXAS WILDCATS

Archer County

Cargo Oil Co. No. 1 Slopansky, sec. 64, Harris Sur. Drlg. 1,272 ft.
O. P. Darsey No. 1 J. T. Longley, sec. 1839, T.E.&L. Sur. Drlg. 100 ft.
Deep Oil Co. No. 1 Wilson No. 5, sec. 75, A.T.N.C.L. Drlg. 3,585 ft.
J. G. Steele No. 1 Andrews, R. Rainey Sur. A-354. Drlg. 970 ft.
Wilson & Ligon No. 1 Pearston, sec. 120, Harris Sur. Drlg. 2,590 ft.

Clay County

L. T. Burns No. 1 Sanzenbacker, L. N. Sparks Sur. A-401. Loc.
Foster Minerals Corp. No. 1 V. H. Yarbrough M. Lassiter Sur. A-288. Loc.
Walter H. Gant No. 3 C. M. Worsham, H. &T.C. Sur., Blk. 4. Drlg. 2,150 ft.
Green Mt. Oil Co. No. 1 Staggs, sec. 34, A.C.S.L. Sur. Drlg. 2,070 ft.
R. N. Hamilton No. 1 Fred Wines, sec. 4, H. Dixon Sur. A-106. S.D.O. 260 ft.

Cooke County

Denver P. & R. Co. No. 1 Solomon, W. G. Hunt Sur. A-493. Loc.
Geo. L. Pace No. 1 J. A. Rohmer, Geo. Ivy Sur. A-516. Loc.
Peterson et al No. 1 J. M. Floyd, Chas. DeMorse Sur. A-305. S.D.O. 870 ft.
Sparks & Russell No. 1 C. F. Bundy, P. P. Cary Sur. A-1239. Spud. and S.D.

Denton County

Bolivar Drlg. Co. No. 1 Bentley, J. Yoakum Sur. A-1443. Core S.S.O. 1,698-1,705 ft.; will test.
Bolivar Drlg. Co. No. 1 J. P. Knox, R. Howard Sur. A-542. Gas sd. 1,950-55 ft.; S.D.O.
H. Culver No. 1 Waide, J. Chisum Sur. A-278. Drlg. 1,315 ft.
J. C. Foster No. 1 Jeffcoat, J. West Sur. Drlg. 3,008 ft.
A. A. Lander, Inc., No. 1 Forrester, Jean Baroux Sur. A-45. 6⅝-in. csg. 1,640 ft.; O.S. 1,648-52 ft.; tstg. est. 20 to 25 bbls.
Oil Finance No. 1 J. S. Gambill. S.D.O. 2,030 ft.
Ruwaldt & Martin No. 1 Joe S. Gambill J. B. January Sur. A-658. Drlg. 1,511 ft.

Grayson County

F. Gailbreath et al No. 1 Singletary, Chas. Quillian Sur. A-989. P.B. 3,862-75 ft.; pmpd. 30 bbls. oil and trace wtr.; C.O.
North Texas Oil Co. No. 1 A. M. Smith, R. M. Williamson Sur. A-1300. S.D.O. 370 ft.
Olson et al No. 1 D. R. Ultger, P. P. Cadv Sur. A-301. Fsg. 1,800 ft.; D.S. at 5,751 ft.
Pete Shanor No. 1 Blair. H.L. 3,548-55 ft.; show heavy oil; treating with acid; swbg.; S.D.O.

Hardeman County

Locke & Durham No. 1 A. Schoppa, sec. 57, H.&T.C. Sur., Blk. 16. Drlg. 700 ft.

Jack County

Big "6" Oil Co. No. 1 J. S. Callis, S.P.R.R. Sur. A-575. Drlg. 1,705 ft.
Carpenter Oil Corp. No. 1 Johnson, R. Parker Sur. A-461. R.U.S.
Danciger O. & R. Co. No. 1 Kinder, B.S.& F. Sur. A-83. Drlg. 3,050 ft.
H. M. Leidecker No. 1 J. W. Padgett, E. Allbritton Sur. A-1890. Drlg. 600 ft.
Tebay & Leberman No. 1 S. E. and E. W. Rankin, J. P. Thomason Sur. Loc.
Tillman et al No. 1 Jones, J. Helmstutter Sur. No. A-1269. Drk.
R. A. Westbrook No. 1 Worthington-Knox, B.B.B.&C. Sur. A-185. Pits.

Montague County

Denver P. & R. Co. No. 1 Copeland, Blk. 162, Kembro Sur. Drlg. 4,480 ft.
Gibson-Jennings No. 1 J. G. Howard, Blk. 91, K.C.S.L. Sur. Drk.
Moss Holmes No. 1 I. N. Monroe, F. Secrest Sur. A-665. Loc.
Montague Oil Co., Inc., No. 1 W. J. Bell, sec. 2,882, T.E.&L. Sur. Drlg. 4,210 ft.
Selby O. & G. Co. No. 1 J. M. Batts, M. B. Tatum Sur. A-740. Loc.
Ventex Investments, Ltd., No. 1 S. E. Bell, sec. 11, M.E.P.&P. Sur. Drlg. 2,378 ft.

Wichita County

Christie et al No. 1 Vanmeter, Blk. 35, K.W.V.F.L. Sur. Fsg. 2,060 ft.
Leo Oil Co. No. 1 Fonville, sec. 323, Waggoner Co. Sur. R.U. and S.D.
Petroleum Prod. Co. No. 73 First National Co., Blk. 29, K.W.V.F.L. Sur. 7-in. csg. cmt. 3,671 ft.; S.L. 3,720-43 ft.; treated acid; est. 150 B.P.D. at 3,800 ft.

Wilbarger County

Consolidated Oil Co. No. 1 Waggoner-BB, S.P.R.R. Sur. A-535. Spdg.
Davis Oil Corp. No. 1 Waggoner-A, sec. 36, H.&T.C. Sur., Blk. 2. O.W.D.D.; fsg.; T.D. 3,197 ft.
Gibson & Jennings No. 1 Waggoner, sec. 109, H.&T.C. Cur., Blk. 14. Drlg. 1,520 ft.; S.S.O. 1,619-20 ft.; tstg.
F. A. Lain No. 1 J. Coffee, sec. 44, H.&T.C. Sur. O.W.D.D.; drk.
Geo. L. Pace No. 1 Waggoner, sec. 45, H. &T.C. Sur., Blk. 4. Drlg. 275 ft.
L. Webb No. 1 Waggoner, sec. 49, H.&.T. C. Sur., Blk 2. L.S.O. 2,406-28 ft.; tested wtr.; S.D.O.; recmtg. csg.

Wise County

Latex Oil Co. No. 1 C. R. Smith, J. Couch Sur. A-104. Drlg. 2,050 ft.
Texas-Canadian Dev. Co. No. 1 T. N. Maxwell, I. Epps Sur. A-267. S.D.O. 4,025 ft.

Young County

Ambrose & Meyers No. 1 Brogden, T. C. Wadley Sur. A-2309. Loc.
F. W. Bennett No. 1 T. E. Mathews, I. Hughson Sur. A-2162. Spdg.
Collins & Fitzwater No. 1 J. G. Castleman, sec. 72, T.E.&L. Sur. Drlg. 300 ft.
J. E. Kadane No. 1 B. F. Manley, T.E.&.L. Sur. 2128. Drk.
D. P. Kenyon No. 1 J. W. Daws, T.E.&L. Sur. 752. Drlg. 500 ft.
C. A. Lupton et al No. 1 Hall, B. R. Aiken Sur. A-2241. Drlg. 2,200 ft.
Pitzer & West & Lion No. 1 Mrs. F. Wray, T.E.&L. Sur. 3411. Drlg. 1,120 ft.
Pitzer & West No. 1 J. C. Nolen, T.E.&L. Sur. 606. Drlg. 2,772 ft.
T. G. Shaw Oil Corp. No. 1 J. L. McLaren, sec. 6, B.B.&C. Sur. 9-29. Spdg.
A. T. Strong No. 1 M. K. Graham, T.E.&L. Sur. 3410. Drlg. 2,000 ft.
C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1772. Drlg. 3,380 ft.
Yorktex Pet. Co. No. 1 W. E. Steele, I.R.R. Sur. A-156. Fishing 1,600 ft.

WEST TEXAS WILDCATS

Andrews County

G. F. Getty, Inc., No. 1 R. H. Lindley, sec. 8, Blk. A-46. T.D. 4,642 ft.; pumping 25 bbls. fluid—oil and water.
Geo. F. Getty No. 1 Moxley. T.D. 4,802 ft. P.B. to 4,792 ft.; testing.
Landreth Prod. Co. No. 1 L. Jones, sec. 11, Blk. A-42, P.S.L. Sur. M.I.R.
Standard of Texas No. 1 Gray Estate, sec. 21, Blk. A-42, P.S.L. Sur. Drlg. 2,737 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. T.D. 3,992 ft.; ran csg.

Cochran County

Bond & Harrison No. 1 Dean, Labour 1, League 85, Greer Co. School Lands. Brown lime 3,760 ft.; drlg. 4,440 ft.
Pete Wiggins et al No. 1 C. Slaughter Dean, C Lab. 26, League 92, Lipscomb Co. School Ld. Loc.

Coke County

Plymouth Oil Co. No. 1 Mrs. Mary Hanna, sec. 252, Blk. LA, H.&T.C. Sur., 1½ mi. SW of Blackwell. Drlg. 528 ft.

Crane County

Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. T.D. 4,432 ft.; testing water shutoff.
Sinclair Prairie Oil Co. No. 1 University, sec. 13, Blk. 35. Drlg. 3,300 ft.

Crockett County

Superior Oil Co. of Calif. No. 1 J. S. Todd, C SE¼ sec. 55, Blk. UV, G.C.&S.F. Sur. Drlg. 1,717 ft.

Dawson County

E. L. Wilson et al No. 1 Texas Ld. & Mtg. Co., 1,980 ft. from S and E, sec. 45, Blk. M, E.L.&R.R. Sur. Drk.

Ector County

Bond & Harrison No. 1 Rumsey, sec. 35, Blk. 45, Twp. 1n, T.&P. Sur. T.D. 4,265 ft.; testing.

Edwards County

Dan Auld et al No. 1 Rigsby, sec. 16, Blk. OK, G.C.&S.F. Sur., 15 mi. NE of Rock Springs. Drlg. 756 ft.

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless. T.D. 2,907 ft.
Forrest Dev. Co. No. 1 J. A. Scott, sec. 105, Blk. 2, H.&T.C. Sur. Drlg. 4,051 ft.
Martin & Brubaker No. 1 Brown, W. E. Richardson Sur., sec. 4, Blk. R. T.D. 2,880 ft.
Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2½ mi. NE of Raton. S.D. 3,050 ft.

Gaines County

A. G. Carter No. 1 A. L. Wasson et al, sec. 48, Blk. AX, P.S.L. Sur. Drlg. 2,906 ft.
T. N. Sloan et al No. 1 Barber, NE cor. sec. 19, Blk. A-28. P.S.L. Sur. Loc.

Garza County

S. Caprito No. 1 Post Estate, sec. 230, Blk. 5, K. Aycock Sur. Drlg. 2,627 ft.

Glasscock County

Fleetborn Oil Co. No. 1 Black Arrow, sec. 3, Blk. 34, Twp. 3s, T.&P. Sur. T.D. 2,853 ft.; set csg.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 83, League 38, Zavala Co. Sch Lds. T.D. 5,030 ft.; P.B. to S.O. water.

Howard County

Moore Bros. No. 1 T.&P. Land Trust, sec. 33, Blk. 30, Twp. 1s, T.&P. Sur. Drlg. 2,000 ft.
Shasta Oil Co. No. 1 Cora Echols, sec. 5, Blk. 15, T.&P. Sur. Drlg. 1,935 ft.
R. A. Westbrook et al No. 1 G. T. West, sec. 48, Blk. 33, Twp. 1n, T.&P. Sur. S.D. 1,460 ft.; rebldg. drk.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. 3,045 ft.

Jones County

T. K. Simmons No. 1 E. A. Hicks, sec. 5, O. A. Lands Sur. Drlg. 2,240 ft.
Ungren & Frazier No. 1 J. J. Steele, sec. 11, Blk. 15, T.&P. Sur. T.D. 2,487 ft.; P.B. to 2,225 ft.; W.O.C.

Loving County

Finley et al No. 1 W. D. Johnson, sec. 24 Blk. 56, Twp. 1, T.&P. Sur. M.I.M.
Mason Oil Co. No. 3 Kyle, sec. 20, Blk. 55, Twp. 1, T.&P. Sur. Drlg. 2,865 ft.
Stanolind O. & G. Co. No. 1 M. Kyle, sec. 20, Blk. 55, Twp. 1, T.&P. Sur. W.O.C. 515 ft.

Mitchell County

Mitchell O. & G. Co. No. 1 Z. Morrison, sec. 36, Blk. 29, Twp. 1n, T.&P. Sur. Machine.

Pecos County

Adams & Black No. 1 Masterson, sec. 71, Blk. 10, H.&G.N. Sur. S.D. 360 ft.
Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. S.D. 2,290 ft.; C.O.
Hightower Oil Corp. No. 1 Holmes, sec. 6, Blk. C-3, E.L.R.R. Sur. Drlg. 2,644 ft.
Humble O. & R. Co. No. 1 E. M. Gray, sec. 94, Blk 11, G.H.&S.A. Sur.; 5,000-ft. test. Drlg. 3,300 ft.
Humble O. & R. Co. No. 1 Tippett, sec. 537, T.I.&M. Sur. Drlg. 1,000 ft.
E. R. Minshall No. 1 Banker, sec. 25, Blk. 146, T.&St.L. Sur. T.D. 3,005 ft.; P.B. to 2,974 ft.; C.O.
Pinerock Oil Co. No. 1 White & Baker, SE cor. sec. 5, Blk. 207, T.C. Sur. Drlg. 707 ft.
Walter Abell No. 1 White & Baker, sec. 2, Blk. 179, T.C.R.R. Sur. Drlg. 1,412 ft.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. T.D. 4,900 ft.; C.O.
Trans-Pecos Oil Co. No. 1 Gallagher, sec. 9-51-10, T.&P. Sur. S.D. 1,280 ft.
Young No. 1 Perry. T.D. 250 ft.; set csg.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drlg. 941 ft.
A. H. Main No. 1 Greenlee, sec. 40, Blk. 347, 13 mi. NE of Marfa. Drlg. 700 ft.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T. & P. Sur., NW cor. of county. Drlg. 3,334 ft.

Reeves County

Grisham & Hunter No. 1 Montgomery, sec. 1, W. R. King Sur. Top Delaware 3,852 ft.; reaming 3,870 ft.

Runnels County

K Z Oil Co. No. 1 B. Fletcher, 114 ft. NW and 190 ft. from SW, E. C. Good Sur. M.I. rotary.
Price & Kramer No. 1 Giesecke, Blk. 227, Hughes Sur. Drlg. 222 ft.
Stevens & Glover No. 1 Fowler, sec. 150, E.T.R.R. Sur., 2 mi. NE of Ballinger. R.U.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. R.U.
Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; C.O.

Scurry County

Bristow & Cantrell No. 1 Tomlinson, sec. 122, Blk. 97, H.&T.C. Sur. Drlg. 2,113 ft.
E. L. Goos No. 1 Henderson, sec. 148, Blk. 97, H.&T.C. Sur. R.U.M.

Upton County

Amerada Pet. Corp. No. 5 Lane, sec. 32, Blk. 1, M.K.&T. Sur. Drlg. 2,200 ft.

Ward County

Magnolia Pet. Co. No. 1-55 Sealy, sec. 55, Blk. F, G.M.M.B.&A. Sur. R.U.S.T. 2,618 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. Drlg. 3,444 ft.

Winkler County

Richardson No. 1-B Walton, sec. 20, Blk. 77, P.S.L. Sur. T.D. 2,737 ft.; testing.
York & Harper et al No. 1 Gunter & Munson, sec. 7, Blk. C, G.M.M.B&A. Sur. Fsg. 4,400 ft.

Yoakum County

Bahan et al No. 1 Shook Est., sec. 420, Blk. D, John H. Gibson Sur. S.D. 716 ft.
Magnolia Pet. Co. No. 1 Mrs. M. E. Taylor, sec. 201, Blk. D, John H. Gibson Sur. T.D. 202 ft.; set csg.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

J. L. McMurray Hrs. No. 1 Edington, 3 mi. S Cross Cut. R. G. Milliken Sur. A-618. Drlg. 500 ft.

Callahan County

A. R. Forster No. 1 C. B. Snyder, NW cor. NE¼ county, sec. 139, B.B.B.&C. Sur. Sand 1,070-75 ft.; U.R. 6-in.

Coleman County

Anzac Oil Corp. No. 1-J Morris, 1,980 ft. from S. 880 ft. from W, Blk. 26, R. Rodriquez Sur., 8 mi. NE Coleman. Loc.

Eastland County

J. T. Anderson No. 1 Crist, 8 mi. N of Rising Star, sec. 36, Lavaca Co. Sch. Lds. U.R. 12-in. to 735 ft.
J. A. Bearman et al No. 1 Mrs. R. L. Poe, S edge Cisco, sec. 79, H.&T.C. Sur., Blk. 4. Drlg. 1,160 ft.
F. J. Estes No. 1 Gentry, A. Popejoy Sur. S.D. 3,000 ft.
Hoffman & Page No. 1 Dodd, 5 mi. S of Ranger, Subd. 11, William VanNorman Sur. Drlg. 2,700 ft.
States Oil Corp. No. 1 H. S. Schmick, 1 mi. NE Eastland, SE¼ sec. 1, H.&T.C. Sur., Blk. 4. S.D. 1,625 ft.

Jones County

Fain & McGaha Oil Corp. No. 1 Lewis, 5½

(Continued on Page 252)

PERSONAL

CLEM S. CLARKE, engineer and independent oil operator of Shreveport, La., has been retained by Gulf Oil Corporation of Texas to supervise the geophysical work upon its recently acquired 1,000,000-acre block in Florida, covering almost the entire county of Collier, and the southern portion of Henry and Lee counties. Mr. Clarke assembled this extensive acreage, and assigned it to the Gulf company, retaining an interest. Mr. Clarke is a Cornell University man and served in the World War after which he went to Shreveport.

MARSHALL BROWN has resigned from the service of the Gulf Oil Corporation to become associated with F. B. PARIOTT, in Tulsa. Mr. Brown served four years with Gulf in Venezuela.

HERBERT GREENFIELD, president of the Alberta Oil and Gas Association, has returned to Calgary from Toronto, Ontario, where he attended the opening of the new Stock Exchange Building.

J. L. (JIMMY) COSS, JR., has taken a position in the advertising department of the Allsteel Products Manufacturing Company at Wichita, Kans., and is leaving Amarillo, Tex., where he has been the past six years in the accounting department of the Texoma Natural Gas Company.

SAMUEL H. GLASSMIRE, attorney of Tulsa, addressed the monthly meeting of the North Texas Geological Society at Wichita Falls, Tex., on April 6 on "The Legal Aspects of Oil Leases—The New Conception of Oil Production."

JAMES G. STEESE, president of the Guajillo Corporation and affiliated companies and formerly manager of the South American Gulf Oil Company, has been designated by the president as an official delegate upon the part of the United States to the Second World Petroleum Congress to be held in Paris, France, in June during the International Exposition. General Steese has previously represented the United States at international congresses in Egypt, Italy, Poland, Belgium and Great Britain, as well as upon various international commissions. For his war service he holds the D.S.M. of the United States and six foreign decorations including a Croix de Guerre and a Silver Medal for bravery. He is an Officier de l'Instruction Publique of France and has subsequently received the French Sahara decoration of Khames de l'Ahal Saxaoul.

R. L. PATTINSON of the Central Pipe Line Company, Chatham, Ontario, is spending a few weeks at St. Petersburg, Fla., with MRS. PATTINSON and family.

JACK L. JACOBSON, of the welding fittings division of Midwest Piping & Supply Company, Inc., St. Louis, Mo., is making an extended sales trip through the Mid-Continent area.

MYRL MANNSCHRECK of Shreveport, La., is now scouting the West Texas district for the Mid-Continent Petroleum Corporation, with headquarters at Midland. He succeeds CHARLES L. SHERWOOD, who resigned to accept a similar position with George F. Getty, Inc., at Midland, Tex.

ARCH H. ROWAN, Fort Worth, Tex., drilling contractor and oil producer, was a business visitor in the East last week. He visited in Youngstown, Ohio; Washington, D. C.; New York and Pittsburgh. While in the East, Mr. Rowan placed an order for a new combination diesel-electric, heavy-duty rotary rig.

JERRY KNIGHT is the new president of the Panhandle Geological Society which meets monthly in Amarillo, Tex.; C. C. HEMSELL, Columbian Fuel Corporation, vice president, and BEN PITCHER, Texas Company, secretary-treasurer. JOHN GALLEY, of the Shell Petroleum Corporation, is the retiring president.

W. S. S. RODGERS, of New York, president of the Texas Company, and B. E. HULL, of Houston, Tex., president of the Texas Pipe Line Company, visited the North Louisiana division of that company in Shreveport, La., and made tours of inspection through the Rodessa field with R. C. STEWART, division manager.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Harry F. Sinclair, well known oil producer of Independence, Kans., will move to Tulsa. He says if he likes the place he will make it his permanent residence.

The Blue Creek field in Kanawha County, West Virginia, is producing 15,000 barrels per day. Wells have been coming in recently all the way from 50 to 1,000 barrels initially.

The capacity of the Midwest Oil Company's refinery at Casper, Wyo., will be increased from 1,000 barrels to 8,000 barrels per day.

Waters-Pierce Oil Company stock, par 100, is quoted at $2,300 bid and $2,700 asked.

20 YEARS AGO

The United States is in the World War. Oil is an essential instrument of war. The United States must supply most of it. This country is producing about 870,000 barrels of crude oil per day at this time. The Mid-Continent and Gulf Coast fields produce 468,000 barrels per day. So, a great draught on stocks and on the Mexican oil fields will be necessary.

Ike Shuler and Ed George, of Tulsa, have received a check for $500,000 from the Roxana Petroleum Company (Royal Dutch-Shell) for properties in Osage County, Oklahoma.

10 YEARS AGO

This year's oil and gas pipe line building program calls for an investment of at least $100,000,000, and represents 2,500 miles of various sizes of big pipe.

Magnolia Petroleum Company cuts the price of Kansas, Oklahoma, North Central and East Central Texas crude an average of about $1.22 per barrel. Its former range of $1.30 up to $3.57 (the latter for 52-gravity and over) is changed to $1.05 to $1.45 (for 52-gravity and over). No company has yet met the new schedule.

Mark E. Davis, of Heggem & Davis, oil producers and manufacturers, dies in Tulsa.

P. H. MURPHY, associate petroleum engineer, U.S.G.S., Tulsa, has been transferred to the field office of the survey at Thermopolis, Wyo.

MR. and MRS. CLYLE SMITH, Midland, Tex., are the parents of a baby girl, MARJORIE WAYNE. Mr. Smith is with the Magnolia Pipe Line Company.

J. H. McLEOD, president of the Royalite Oil Company of Calgary, Alberta, is spending a short time in Toronto and other eastern points on business.

GEORGE E. WAGONER, formerly in charge of the geophysics division of Standard Oil Company of Louisiana, Shreveport, La., has been transferred to the Carter Oil Company in Tulsa.

L. L. RECTOR, president, Rector Well Head Equipment Company, Fort Worth, Tex., and LEW D. HILTON, sales manager, Cameron Iron Works, Inc., Houston, Tex., have completed an extended trip through the Rocky Mountain region and Turner Valley field, Canada.

W. W. DIEHL, southern California representative of Anglo California National Bank of San Francisco, and CLAY ROBBINS, member of the Los Angeles, Calif., law firm of Fleming & Robbins, have been elected to the board of directors of Republic Petroleum Company.

HAROLD R. HOOTS has just resigned as a member of the Union Oil Company's geological department to become chief geologist of Richfield Oil Corporation and upon assuming his new duties will report to FRANK R. MORGAN, who in his new position is building up a strong drilling and production department.

PARAGRAPHS

ROBERT W. RYAN has been made a scout for the Magnolia Petroleum Company and placed in the Southwest Texas district by the company.

MAJ. WILLIAM BOWIE, former chief of the division of geodesy of the U. S. Geologic and Geodetic Survey, will address members of the Fort Worth Geological Society in that city on April 16. His talk will be on "Isostasy."

GEORGE C. GIBBONS, executive vice president of the Texas Division of the Mid-Continent Oil and Gas Association, is outlining plans for the association's 1937 annual meeting which will be held in Dallas, Tex., October 29 and 30, according to JAKE L. HAMON, president of the organization.

LEONARD MACKOWSKI, who heads the packer department of the Oil Well Supply Company shops in Bradford, Pa., recently closed a tour of the Mid-Continent fields. Mr. Mackowski succeeded P. H. (PATSY) MACK, retired, who for many years was one of Oilwell's most widely known employes.

L. M. BRIDGEMAN, of Los Angeles, Calif., assistant manager, Union Oil Company service stations, resigned his position April 1 and will devote his future attention to matters of a personal nature.

CHARLES A. NEWLAND, of Charleston, W. Va., operations manager of the West Virginia division of the Standard Oil Company of New Jersey since 1936, has been promoted to assistant division manager. He joined the company in 1920 as a shipping clerk at Wheeling, W. Va.; was promoted to Parkersburg as a salesman, and became district manager there in 1929, and in Fairmount in 1930, and district manager at Charleston in 1932. Later he filled the offices of assistant wholesale manager, wholesale manager and operations manager.

H. D. FOSTER, chief engineer of El Segundo refinery of the Standard Oil Company of California, retired February 28 after 45 years of continuous service with Standard companies. At the age of 16 he joined the Standard as a messenger boy at Green Point, Long Island. He attended a night school, taking a course in steam engineering and blue print work, and a correspondence school course in mechanical drawing and through the guidance of H. C. FOLGER, JR., developed into a promising engineer. In 1903 he was sent to California.

R. I. CLANCEY of Toronto, Ontario, president of Plains Petroleums, Ltd., spent several days recently in Lethbridge and Taber, Alberta.

R. R. KIRKPATRICK, formerly with Phillips Petroleum Company at Amarillo, Tex., is now in Los Angeles, Calif., where he is associated with the Fred E. Cooper interests.

P. J. HEMPHILL, G. M. STULL and A. B. KING, all of Dallas, Tex., have organized the Louisiana Mineral Development Company, incorporated in Caddo Parish, Louisiana.

ARTHUR DENSMORE, of Lundbreck, Alberta, secretary of Inland Petroleums, Ltd., recently visited the company's wells in Montana and inspected operations in the Taber area of southern Alberta.

P. F. DAVIS, superintendent of the electrical division of the Texas Company, Tulsa, was elected president of the Petroleum Industry Electrical Association at its annual convention in Shreveport, La., last week. E. M. SMITH, of the United Gas System, Houston, was elected vice president and H. E. BROWNE of Sinclair Pipe Line Company, Independence, Kans., was reelected secretary-treasurer.

F. A. EMMONS, vice president and general sales manager of Foote Brothers Gear & Machine Corporation, Chicago, recently returned from a trip made through the Mid-Continent field for a survey of field conditions and sales prospects for the balance of the year. Mr. Emmons reports a very favorable outlook for the sale of oil well pumping equipment in most fields, and of particular interest a trend toward heavier pumping equipment to cover ultimate pumping conditions, particularly in the East Texas field.

What! Time To Sail?

Life used to be one rush for the boat after another for Herbert F. Miller, director and department manager of the Carter Oil Company, Standard Oil subsidiary. Starting at 23, he crossed the Atlantic every year for 11 years. The result was that the Brooklyn-born young man accumulated more first-hand knowledge of foreign countries than he had of his own north of the Hudson. He caught up later. After getting a job at 16 as messenger boy in the office of the Standard Oil Company in New York he studied shorthand at night. When Walter C. Teagle sailed for Europe in 1909 in connection with the company's export business he took young Miller with him as secretary. This association continued, and annually thereafter for 10 years the former messenger boy visited foreign lands.

—Blank and Stoller.

HERBERT F. MILLER

In 1921 Mr. Miller was sent to Tulsa to report market conditions and to purchase gasoline and other oil products. In 1932 the Carter created its marketing department and placed him in charge, with his office in Tulsa. Mr. Miller handles all purchases and sales of crude, casinghead gasoline, liquefied petroleum gases, lubricating oils and greases—a range of duties said to be covered by no other one man for a major company. He was made a director three years ago.

Thirty-five of Mr. Miller's 51 years have been spent in the service of Standard of New Jersey. He married Miss Martha Davidson, of Little Falls, N. J. There are four children. Mr. Miller confesses clubs and golf links have little lure for him.

ROBERT WILKINSON of Calgary, Alberta, has returned from a business trip to Toronto and Montreal.

O. T. DAWSON, of Tulsa, vice president of the National Supply Company, is a patient in a Kansas City hospital, seriously ill with a complication of diseases.

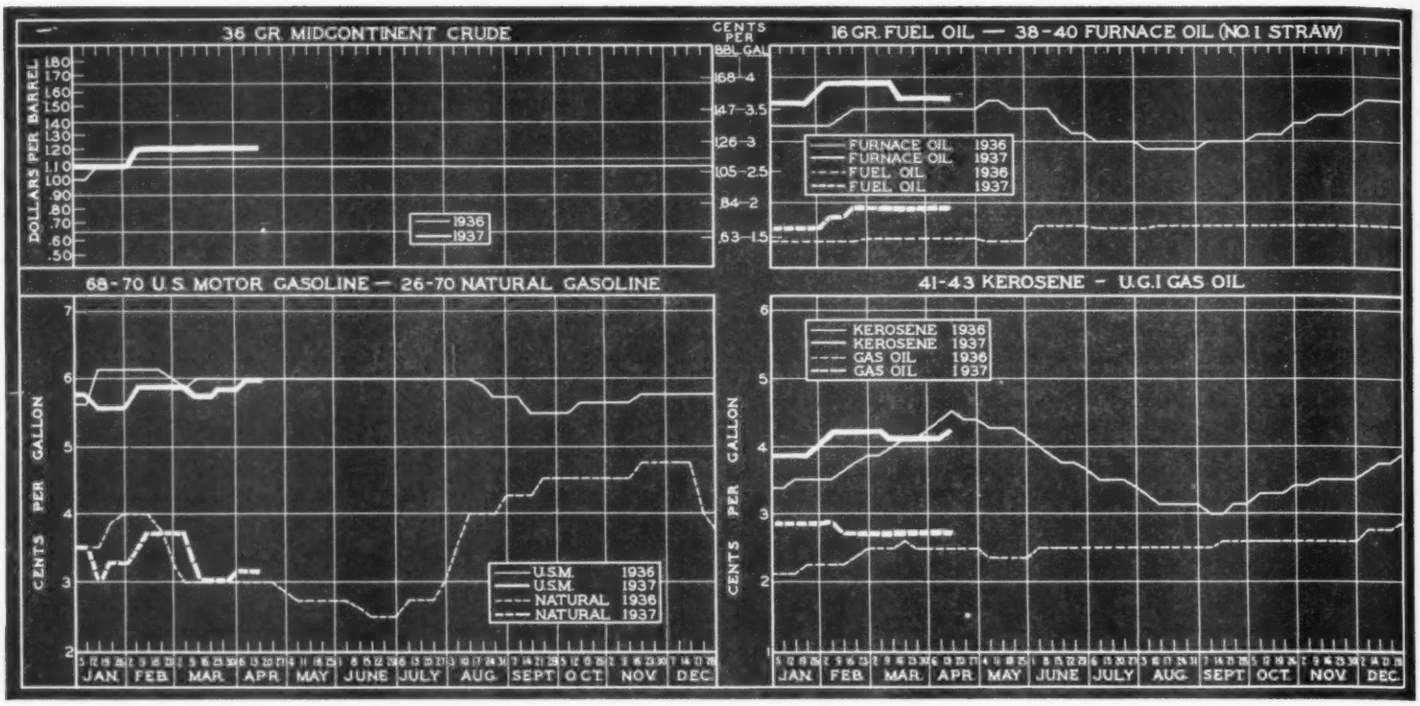
J. T. BAILEY of Kitchener, Ontario, and KARL HOMUTH of Preston, Ontario, officers of the Montreal-Alberta Oil Company, were in Wainwright, Alberta, recently to inspect drilling operations.

H. V. BERNARD, JR., in charge of Texas Company air transportation activities in the Far East, with headquarters at Chung King, China, stopped in Houston, Tex., the past week on his way back to the Orient.

C. E. SULLIVAN, recently made vice president of the Foxboro Company, Foxboro, Mass., will spend the next six weeks overseas, visiting the company's factory in England and distributors in other European countries.

W. K. LINK, formerly with the Carter Oil Company in Tulsa, has been transferred to Shreveport, La., as head of the geophysical exploration department of Standard Oil Company of Louisiana, succeeding E. V. WHITWELL, who recently was called back to the Carter Oil Company as head of its geological division.

DONALDSON B. THORBURN has joined the Shell Union Oil Corporation's advertising department as assistant to FRED C. FOY, advertising manager. Mr. Thorburn previously was in charge of advertising for the Bank of America and previously was connected with the Wall Street Journal in San Francisco and New York.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Tractor Fuel Is Liveliest Product in Group 3 Market; Gasoline Firm

By T. F. SMILEY

The unassuming tractor fuel was the most animated figure in the Group 3 market scene this week. Buying was brisk and prices were tightening. Substantial movement into northwestern agricultural areas was reported. Continuance of mild weather, bringing more farmland into condition for cultivation, will stimulate demand still further, and makers of these distillates are looking forward to the best season they ever had. The newer models of farm tractors are equipped with higher-compression engines, and this mechanical change is reflected in the call for higher-octane fuels. In some states extreme care is taken to bar entrance of tractor fuels which do not meet certain specifications. In the Dakotas the regulations in this regard are not only particularly exacting, but they are adhered to rigidity. Tractor distillates able to meet the tests find a ready outlet in these states.

Gasoline Outlook Cheerful

The outlook for gasoline continued cheerful. Refiners who have refused to get panicky over the country's rising stocks felt their equanimity was beginning to find vindication in the reversal of trend revealed by Bureau of Mines statistics. The weather man was still failing to give a hand toward getting the spring motoring season on its way, but in spite of his recalcitrance the market was firm and opinion prevailed that only a little more sunshine was needed to lift quotations to higher levels.

No burdensome stocks were reported anywhere in the Mid-Continent territory, and some refiners were several days behind in their shipments. Small refiners appeared to be having no difficulty in disposing of their output. With the advent of warm weather the diminished supply of third-grade gasoline still manufactured is coming in for a play. Tankcar sales of the better-quality material in this classification ran from 5 to 5¼ cents. A few refiners unfavorably situated as to freight rates were reported to have made slight concessions.

One of the strange developments of the week was efforts on the part of East Texas and North Louisiana refiners to buy third-grade gasoline to make up for their own lack of this material. Not so long ago the whole oil industry was in a state of nervous collapse because of the flood of third-grade gasoline billowing out of East Texas. Later the Rodessa area in Louisiana was responsible for another attack of jitters. A prediction that either of these districts would ever be asking for gasoline instead of pouring it out upon a defenseless market would have seemed idiocy.

Refiners say that the current inquiries for third-grade gasoline is not indicative of any upturn in the total demand. Fewer refiners are making it, increasing the readiness with which the available supply can be disposed of. Many refiners who formerly made third-grade motor fuel, or perhaps a product ranging from 60 to 65 octane, have been shifting to the regular 68-70 grade to meet the requirements of new cars.

Naturals Better Than Usual

Natural gasoline demand was nothing to get excited about; but it was sufficient to absorb current output, and that is more than it usually has been possible to say at this time of the year. Prices, unchanged from last week, were just at the point where any effort to raise them discouraged buying immediately. Judging from the more generous buying of natural this spring, the 1937 motor fuel will have more volatility than in other years. There apparently is an increase too in the practice of making an excellent motor fuel by mixing third-grade and natural.

Kerosene was stronger, with signs of scarcity. Not a gallon was obtainable in East Texas, it was said. Prime-white distillate was sturdy at current prices, and not much was available. Many refiners were reported to be making it into water-white kerosene and tractor fuel.

Bright stocks and neutrals were reported to be moving in satisfactory volume, with prices unchanged. Wax was sagging a little.

Refined Oil Market Barometer

Gasoline gaining strength, although few areas have had more than a few days of real motoring weather. Concern over total stocks continues to subside. Export demand exerting a strengthening influence. Tractor fuels active, with rising demand for kerosene which forms their base. Natural gasoline having best spring business in its history.

MID-CONTINENT. Tractor distillates buoyant. Gasoline firm. Naturals holding well.

EAST COAST. Fuel oils improved and more gasoline moving. Lubricants steady.

GULF COAST. Gas oil improved by export buying, price advancing. Gasoline strong.

CALIFORNIA. Gasoline holding. Fuel oil firm.

PENNSYLVANIA. Motor gasoline up. Lubricants continue strong.

CHICAGO. Gasoline firm. Kerosene improving. Industrial gas oils in steady demand.

Improved Conditions in Fuel Oil and Gasoline Feature on East Coast

By H. STANLEY NORMAN

NEW YORK, Apr. 13.—Advances of an eighth to a quarter of a cent per gallon on industrial fuel oils at various points along the North Atlantic Coast were instituted last week by Standard Oil Co. of New Jersey and were met by most other marketers in the district.

Improved conditions in fuel oil and movement of greater volumes of gasoline were features of the market during the week, although resumption of cargo sales of gasoline in the Gulf Coast for coastwise movement, continued interest of exporters in gas oil and maintenance of lubricating stock quotations in the Pennsylvania district were factors considered important.

Varying weather conditions prevailed in this section of the country last week. Temperatures were generally moderate, but rain and threatening weather at end of the week did not stimulate automobile driving. The turn of gasoline stocks downward in the preceding week's refinery statistics produced the anticipated reaction in the trade at large. However, there had been little expression of fear over the record high total to which motor fuel stocks had climbed late in March because of record consumption figures. While later statistics are not yet available, preliminary reports show January motor fuel consumption in the United States to have totaled 1,372,436,000 gallons, an increase of 6.12 per cent over the 1,293,263,000 gallons used in the same month a year ago. In seven states, the increase in January, 1937, exceeded 5,000,000 gallons each, namely, California, Illinois, Michigan, New Jersey, New York, Ohio and Pennsylvania. Numerous other states reported more modest increases, but in many instances the percentage gain over the same month a year ago was greater than in the seven large consumers. Market for heavy fuel oils has been reported strong for several weeks, but the advances instituted by Standard of New Jersey April 1 were the first tangible evidences of improvement.

Standard of New Jersey raised No. 4 heating oil a quarter of a cent at Baltimore and Norfolk to 4.625 cents f.o.b. tankcars. Standard industrial fuel at Philadelphia was advanced an eighth of a cent to 4.5 cents per gallon and the same material at Charleston, S. C., was quoted at 4.375 cents per gallon.

Socony-Vacuum Oil Co., Gulf, Tide Water and Standard of New Jersey raised No. 2 fuel oil at Boston and Providence to 5.125 cents per gallon and most companies raised No. 4 fuel oil at New York and New Jersey plants a quarter of a cent to 4.725 cents per gallon.

Kerosene was not keeping pace with some of the fuel oils, but has shown reasonable strength in the face of weather conditions. Kerosene is quoted at 5.5 cents at refineries in this territory, but material is said to be available in the open market at 5.125 cents per gallon. Orders anticipated when spring plowing starts in the farming districts have not reached the market at this time, but probably will provide strength needed to prevent further price decline within a few days.

Despite approach of the summer season, latest available statistics show burner oil shipments to have continued through February at rates well in advance of 1936. During February, distillate oil burner shipments totaled 8,746, compared with 9,266 in January and with 6,370 in February, 1936. For the first two months of this year, shipments totaled 18,012 burners, an increase from 14,489 shipped in the corresponding two-month period of last year. New orders remaining unfilled on March 1 totaled 3,507 burners, compared with 749 in January and with 659 in February, 1936. Most of the burners shipped now will not participate materially in fuel oil consumption until 1937-38 winter, but give indication that fuel oil stock accumulation this summer will again receive consideration from refiners. Rumors were current in the Atlantic seaboard district last week that federal agents are conducting investigations along similar lines that figured in the Madison indictments, but no confirmation could be obtained. Rumors were that investigators were inquiring about prices to divided and undivided accounts.

Service station gasoline prices in West Virginia were generally raised a cent per gallon early this month as dealers passed along to consumers an additional cent per gallon tax levy which became effective April 1 in that state. The West Virginia tax is now 5 cents per gallon which coupled with the federal levy of 1 cent pushes the state into the upper bracket of high taxes.

During the latter part of March, the Standard Oil Co. of New Jersey announced a new commercial consumer schedule in West Virginia. Under the revised arrangement, commercial consumers taking tank-wagon or steel barrel delivery of 100 gallons or more at one time are billed at 2 cents per gallon over the consumer tankcar price in effect at the time and place of delivery. Deliveries of less than 100 gallons at a time will be billed at 6 cents per gallon above the consumer tankcar price.

The jobber tankcar price of motor fuel advanced to 8 cents per gallon two weeks ago by Socony-Vacuum was not immediately met by other sellers who said they wanted to determine whether service station quotations advanced before increasing prices to jobbers. A majority continued to supply jobbers with 65 octane, unleaded motor fuel at 7.25 to 7.5 cents per gallon. The retail market remained disturbed in eastern New Jersey last week and open warfare existed around Newark and Harrison where typical gallonage race price signs appealed to motorists. This district has been upset for several weeks. In other parts of New Jersey and New York, however, retail conditions appeared to be on reasonably firm ground. Most stations in suburban New York districts are quoting 17 cents for "house brand" and 19 cents per gallon for premium motor fuel. Spread of association organization among individual station operators is gradually taking in more territory and pump delivery prices have leveled off accordingly.

Exporters continued their active inquiries for gas oil on the Gulf Coast, but no cargo sales were reported during the week. Most suppliers are asking the previously quoted price of 3.875 cents per gallon, f.o.b. the Gulf, for 30 plus translucent gas oil.

Two cargoes of 68 octane gasoline were sold on the Gulf for coastwise movement last week. The previous

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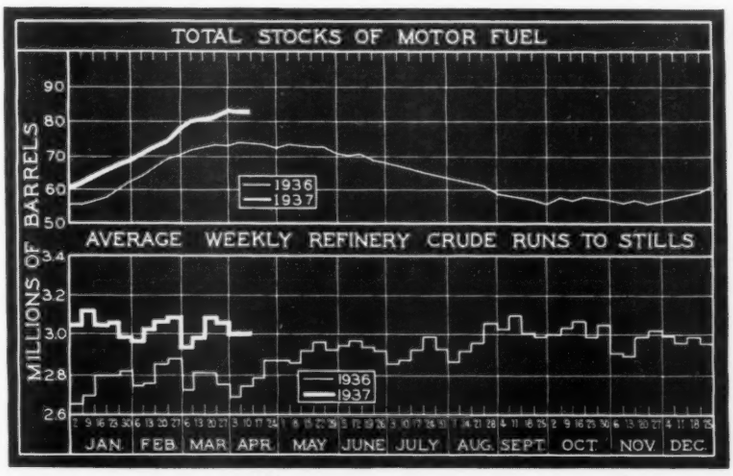
A. P. I. Weekly Refinery Statistics

Week Ending April 10, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	492,000	18,496,000	5,888,000
Appalachian	88.4	105,000	2,867,000	541,000
Indiana, Illinois, Kentucky	92.1	429,000	14,360,000	4,333,000
Oklahoma, Kansas, Missouri	84.6	287,000	9,530,000	2,877,000
Inland Texas	54.3	128,000	2,315,000	1,297,000
Texas Gulf	95.5	648,000	10,803,000	6,640,000
Louisiana Gulf	96.3	124,000	1,444,000	1,493,000
North Louisiana and Arkansas	63.7	45,000	442,000	223,000
Rocky Mountains	69.7	47,000	2,034,000	740,000
California	90.9	473,000	14,870,000	68,053,000
Total reported	88.8	2,778,000	77,161,000	92,085,000
Estimated unreported	.....	227,000	5,418,000	2,496,000
*Estimated total	.....	3,005,000	82,579,000	94,581,000
*Estimated total previous week	.....	3,005,000	82,408,000	95,173,000
*April 11, 1936	.....	2,755,000	73,654,000	96,508,000

*Bureau of Mines basis, currently estimated.



RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of April 13, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	16 0	14 0	4 0	10 1
Decatur	16 0	14 5	4 0	10 1
Joliet	16 0	14 5	4 0	10 1
Peoria	16 0	14 5	4 0	10 1
Quincy	15 8	14 3	4 0	9 9
Davenport, Ia.	16 0	14 5	4 0	10 1
Des Moines	15 8	14 3	4 0	9 9
Mason City	16 2	14 7	4 0	10 3
Sioux City	16 0	14 5	4 0	10 1
Duluth, Minn.	16 8	15 3	4 0	10 9
Mankato	16 4	14 9	4 0	10 5
Twin Cities	16 4	14 9	4 0	10 5
La Crosse, Wis.	17 4	15 9	5 0	10 5
Green Bay	17 7	16 2	5 0	10 8
Milwaukee	17 3	15 8	5 0	10 4
Detroit, Mich.	15 1	13 6	4 0	9 8
Grand Rapids	16 5	15 0	4 0	10 9
Saginaw	16 3	14 8	4 0	8 5
Evansville, Ind.	17 5	16 0	5 0	†10 6
Indianapolis	17 7	16 2	5 0	†9 6
South Bend	17 9	16 4	5 0	†9 6
Fargo, N. Dak.	17 4	15 9	4 0	11 5
Minot	18 6	17 1	4 0	12 7
Huron, S. Dak.	17 8	16 3	5 0	10 9
Kans. City, Mo.*	15 4	13 9	4 0	8 9
St. Louis*	15 7	14 2	4 0	9 8
St. Joseph*	15 4	11 9	4 0	6 9
Wichita, Kans.	14 9	13 4	4 0	8 9

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Atl'tic City, N. J.	13 0	11 5	4 0	8 0
Newark	12 5	11 0	4 0	8 0
Annapolis, Md.	15 1	13 6	5 0	10 0
Baltimore	14 5	13 0	5 0	8 5
Cumberland	16 9	14 4	5 0	10 0
Wash'g'n, D. C.*	12 5	11 0	3 0	9 0
Danville, Va.	17 7	15 2	6 0	12 9
Norfolk	16 5	14 0	6 0	11 5
Petersburg	16 8	14 3	6 0	11 7
Richmond	16 8	14 3	6 0	11 7
Roanoke	18 0	15 5	6 0	12 9
Charles'n, W. V.	16 3	13 8	6 0	12 6
Parkersburg	15 6	13 1	6 0	11 2
Wheeling	15 5	14 0	6 0	12 2
Charlotte, N. C.	18 9	16 4	7 0	13 6
Hickory	19 4	16 9	7 0	13 0
Mt. Airy	19 2	16 7	7 0	12 8
Raleigh	18 5	16 0	7 0	12 1
Salisbury	19 0	16 5	7 0	12 7
Charleston, S. C.	17 5	15 0	7 0	11 1
Columbia	18 5	16 0	7 0	12 1
Spartanburg	19 2	16 7	7 0	12 9

*Standard of N. J. has discontinued posting service-station prices at all above points except at Washington where a station price of 16 cents is in effect.

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective March 22, 1937, in West Virginia, commercial consumer taking tank-wagon or barrel delivery of 100 gallons or more at one time, 2 cents per gallon over consumer tankcar price in effect at time and place of delivery; less than 100 gallons, 6 cents per gallon above consumer tankcar price.

Effective Jan. 25, 1937, in North and South Carolina and effective Feb. 27 in Virginia, except in Arlington and Fairfax counties: Deliveries of 50 gallons or more by tank-wagon billed at price 2 cents over posted consumer tankcar price in effect at time and place of delivery. Deliveries less than 50 gallons billed at price 6 cents over posted tankcar price. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	22 0	19 0	7 0	*13 0
Augusta	18 5	15 5	7 0	*14 0
Macon	21 5	18 5	7 0	*14 5
Savannah	20 0	17 0	7 0	*13 0
Birm'ham, Ala.	21 0	18 0	8 0	12 0
Mobile	22 0	19 0	9 0	11 0
Montgomery	23 0	20 0	9 0	12 5
Jackson, Miss.	21 0	18 0	7 0	*13 0
Vicksburg	20 5	17 5	7 0	*13 0
Jacksonville, Fla.	20 5	17 5	8 0	11 0
Miami	20 5	17 5	8 0	12 5
Pensacola	22 0	19 0	9 0	12 0
Tampa	21 5	18 5	8 0	11 0
Lexington, Ky.	19 5	16 5	6 0	11 0
Covington	19 0	16 0	6 0	11 0
Louisville	19 5	16 5	6 0	10 5
Paducah	19 0	16 0	6 0	10 0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, and Tampa, Fla., have a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Denver, Colo.	17 5	5 0	11 5
Grand Junction	20 0	5 0	15 0
Pueblo	15 0	5 0	10 5
Casper, Wyo.	18 0	5 0	11 5
Cheyenne	18 0	5 0	13 0
Butte, Mont.	19 5	6 0	15 5
Billings	21 5	6 0	15 5
Helena	21 5	6 0	15 5
Great Falls	21 5	6 0	15 5
Salt Lake, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 5	6 0	18 0
Boise	21 0	6 0	18 0
Albuquerque, N. M.	17 5	6 5	12 0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank wag. con'r.	Di-vided dlr.	Inc. tax	tank-wag.
Ohio points	17 0	16 0	5 0	*13 5

*Includes state tax of 1 cent.

Divided dealer price is also price to authorized agents, exclusive of .5 cent rental. Tank-wagon price is price to commercial consumers in deliveries of 25 gallons or more; less than 25 gallons get service-station price.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17 5	18 5	4 0	11 5
Los Angeles	17 0	18 0	4 0	9 0
Fresno, Calif.	18 5	19 5	4 0	12 0
Phoenix, Ariz.	21 0	22 0	6 0	‡16 0
Reno, Nev.	20 0	21 0	5 0	13 0
Portland, Ore.	20 0	21 0	6 0	13 5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	23 0	24 0	6 0	16 5
Tacoma	20 0	21 0	6 0	13 5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Albany, N. Y.	14 0	12 5	4 0	7 75
*Met. N. Y.:				
Manh't'n, Br'nx	13 5	12 0	4 0	7 25
Staten Island	13 75	12 0	4 0	7 25
Q'ns & Brklyn	13 5	12 0	4 0	7 25
Buffalo	14 3	12 67	4 0	8 25
Rochester	14 3	12 74	4 0	8 25
Syracuse	14 3	12 7	4 0	8 75
Boston, Mass.	14 0	12 5	4 0	7 50
Portland, Me.	15 8	13 5	5 0	7 75
Manch'ter, N. H.	16 3	14 0	5 0	8 00
Burlington, Vt.	15 9	13 9	5 0	8 75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; Monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	14 0	12 5	5 0	10 5
Pittsburgh	15 5	13 5	5 0	11 0
Allentown	14 5	13 25	5 0	11 0
Erie	14 5	13 0	5 0	10 0
Scranton	14 5	13 25	5 0	11 0
Altoona	15 5	13 5	5 0	11 0
Dover, Del.	14 5	....	5 0	11 0
Wilmington	13 5	....	5 0	11 0
Springf'd, Mass.	14 8	....	4 0	7 75
Worcester	14 8	....	4 0	8 0
Hartford, Conn.	14 6	....	4 0	7 0
New Haven	14 0	....	4 0	7 0
Providence, R. I.	13 0	....	3 0	7 75

Atlantic has transferred all stations to dealers except in Philadelphia and Pittsburgh where prices are 17.5 and 20.0 cents per gallon respectively.

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	20 0	17 5	*10 0	†14 0
Baton Rouge	18 0	15 5	8 0	12 0
Alexandria	18 5	16 0	8 0	12 0
Lafayette	19 0	16 5	8 0	12 5
Lake Charles	19 0	16 5	8 0	12 5
Shreveport	17 5	15 0	8 0	9 5
Knoxville, Tenn.	21 0	18 5	8 0	14 0
Memphis	19 0	16 5	8 0	12 0
Chattanooga	20 5	18 0	8 0	13 5
Nashville	20 0	17 5	8 0	13 0
Bristol	19 75	18 5	8 0	14 5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Standard of La. has transferred all stations to dealers except in New Orleans and Baton Rouge where station prices are 23.5 and 21.5 cents per gallon, respectively.

Price basis to commercial consumers: Effective Dec. 21, 1936, deliveries of 50 gallons or more in one delivery, posted consumer tankcar price plus 2 cents per gallon; consumers taking deliveries of less than 50 gallons at one time pay posted consumer tankcar price plus 6 cents per gallon.

Louisiana kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Omaha	18 4	16 9	6 0	10 4
McCook	18 0	14 0	6 0	10 0
Norfolk	18 8	17 3	6 0	10 8
North Platte	19 2	17 7	6 0	11 2
Scotts Bluff	19 9	18 4	6 0	10 9

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15 7
V.M.&P. naphtha	16 0
Cleaners' naphtha	15 0
Stanisol	15 0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Ok.	15 5	5 0	7 0
Oklahoma City	13 0	5 0	8 0
Tulsa	14 0	5 0	6 0
Ft. Smith, Ark.	15 0	5 0	10 0
Little Rock	17 5	7 5	9 5
Texarkana	15 0	5 0	9 0

Texas

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14 0	18 0	5 0	8 0
Fort Worth	14 0	18 0	5 0	8 0
Houston	14 5	18 5	5 0	8 0
San Antonio	14 5	18 5	5 0	8 0

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Hamilton, Ont.	22 0	....	6 0	17 0
Toronto, Ont.	22 0	24 5	6 0	17 0
Brandon, Man.	29 8	32 8	7 0	22 8
Winnipeg, Man.	28 2	31 2	7 0	20 7
Regina, Sask.	29 5	....	7 0	22 0
Saskatoon, Sask.	32 3	....	7 0	24 8
Edmonton, Alta.	30 5	33 5	7 0	24 2
Calgary, Alta.	28 0	31 0	7 0	21 5
Vancouver, B. C.	22 0	26 0	7 0	23 0
Montreal, Que.	19 0	....	6 0	17 5
St. John, N. B.	24 0	28 0	8 0	18 5
Halifax, N. S.	24 0	28 0	8 0	18 5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal when discounts below station prices are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

Retail Price Changes

Standard Oil Co. (Indiana) April 7 reduced tank-wagon kerosene .4 cent in St. Joseph.

Atlantic Refining Co. April 2 advanced dealer gasoline 1 cent in Springfield, .5 cent in Worcester, 1 cent in Hartford and .5 cent in New Haven and Providence.

Standard Oil Co. of Nebraska April 6 reduced dealer gasoline 3 cents in McCook.

New York Market

(Continued from Page 249)

price of 6.125 cents was reported in both transactions. U. S. Motor gasoline in western Pennsylvania which sagged to 4.5 cents two weeks ago had been revived and most refiners quoted 4.625 cents. Several who withdrew when 4.5 cents was touched were offering limited quantities.

Lubricating oils remained unchanged. A good portion of bright stock and neutral production for April and part of May has been sold. Export interests are willing purchasers at prices in line with their ideas.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of April 13, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below (3d gr.)	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400 grades:		
62 oct. and below (3d gr.)	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
64-66 375	.05¼	.05½
68-70 360	.05⅜	.05⅝

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400	.05	.05¼
64-66 375	.05¼	.05½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05⅜	.05½
63-67 octane		.05⅝
68-70 octane (regular)		.06¼

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below		.05¼
63-67 octane	.05⅞	.06
68-70 octane (regular)		.06¼

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.05	.05⅛
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400 grades:		
62 octane and below	.05	.05⅛
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
64-66 375	.05	.05⅛
68-70 360	.05¼	.05⅜

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05
60-64.9 octane	.06¾	.07
65-70 octane	.07	.07⅛
64-66 375		.05⅛
68-70 350		.05⅜

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07½	.08½
58-60 400, 65 oct. and higher	.08¼	.09¼

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¾
Baltimore		.06¾
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.07
Philadelphia	.07	.07¼
Boston		.07¼
Baltimore	.07	.07¼
Charleston, S. C.		.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)		.07¼
Philadelphia	.07¼	.07½
Boston		.07½
Baltimore	.07¼	.07½
Charleston, S. C.		.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¾	.05⅞
60-64.9		.06
65 octane and higher	.06⅛	.06¼

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.04⅞
52-54 450 (blending)	.04⅞
54-56 450 (blending)	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03⅛
Grade 18-55	.03⅜
Low vapor pressure grade:	
*14-pound v.p. (max.)	.04⅛ .04⅜
*12-pound v.p. (max.)	.04⅜

*Nominal.

NORTH TEXAS—

Grade 26-70	.03⅛
Grade 18-55	.03¾

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.03⅜

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04¼	.04⅜
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04⅜	.04½
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅞	.05

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04½

NORTH TEXAS—

41-43	.04¼	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅝	.04¾

PENNSYLVANIA (inland refineries)—

45	.04⅞
46	.05
47	.05⅛

CHICAGO (Based on Group 3)—

41-43	.04¼	.04¼
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04	.05

NEW YORK (Bayonne, N. J.)—

41-43	.05½

***GULF COAST (domestic)—**

41-43	.05¼

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03⅛	.03¼
No. 3, 15 and above, 28-32	.02⅝	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03¾	.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅜	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03⅝	.03¾

CHICAGO (based on Group 3)—

No. 1 prime white, 38-40	.03⅞	.04¼
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03¾	.03½
No. 3 zero to 15, 28-32	.03¾	.03½
No. 3, 15 and above, 28-32	.02⅝	.02¾

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.05
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.87½

NORTH TEXAS—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cod test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.85

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.75	.80

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.70	.72½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
No. 6, low cold test, 10-16	.80	.85

PENNSYLVANIA (inland refineries)—

36-40	.04⅜	.04½

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.15	1.35
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.75	.95
12-17 (tankers)	.75	.95
San Joaquin Valley:		
10-18 (tankcars)	.70	.90
24 plus diesel, per bbl.	1.00	1.35
San Francisco:		
27 plus diesel		1.40
24 plus diesel (bunkers)		1.40
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03⅞	.04⅛
28-30 diesel (bunkers)		1.65
Bunkers (bulk cargoes)		.95
Bunker C (bunkers)		1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)		.04¾
*Bunker C (to ocean-going ships in N. Y. harbor)		1.20
Industrial fuel (tankcars)		.04½

*Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:	
190-200 D, 15-25	.23
150-160 D, 0-10	.20
150-160 D, 15-25	.19½
150-160 E, 15-25	.19
100-110 D, 0-10	.18
Steam refined:	
631 green (treated)	.17½
600 dark green (untreated)	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 145-50 at 210, 540-550 flash):		
10 pour test	.28	.28½
15 pour test	.27	.27½
20 pour test	.26	.26½
25 pour test	.25	.25½
Steam refined:		
600		.17½
650		.19
600 Pennsylvania flash		.20
630 flash		.24
600 Warren E filtered		.20

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.09
180-3	.10
180-4	.09½
200-3	.10½
200-4	.10
250-3	.11½
250-4	.11
280-3	.12½
280-4	.12
300-3½	.13
400-3½	.14
100-2½ paraffin oil	.05⅜
15-20 Cold Test:	
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08¼	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6		.07
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.07	.08
200-2½-3	.07	.08
300-2½-3	.07	.08
400-3-4	.09	.11
540-3-4	.09	.11
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07	.08
300-5-6	.07	.08
350-5-6	.10½	.11½
400-5-6	.10½	.11½
450-5-6	.10½	.11½
500-5-6	.10½	.11½
600-5-6½	.10½	.11½
700-6½ plus	.10½	.11½
750-6½ plus	.10½	.11½
900-6½ plus	.10½	.11½

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.24½	.25
10 pour test	.23½	.24
15 pour test	.23	.23½
25 pour test	.22	.22½
180 vis. at 70° F., 3 color:		
25 pour test	.24½	.25
200 vis. at 70° F., 3 color:		
Zero pour test	.28	.28½
10 pour test	.27	.27½
15 pour test	.26½	.27
25 pour test	.25½	.26

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0265	.0270
124-126 (a.m.p.) w.c. scale	.0270	.0275

NEW YORK—

Wax in bags fully refined:		
122-125 (am.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0250	.0255
124-126 (a.m.p.) y.s.	.0260	.0265
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05¾
60-62 400		.05⅝
61-63 390	.05⅞	.06
64-66 375	.06¼	.06¼

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white		.05⅛
41-43 water white		.05⅜
41 water white		.05⅜

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:	
600 Warren E	.26½
600 S.R. unfiltered	.24
630 S.R. unfiltered	.25½
600 flash, S.R.	.26½
630 flash, S.R.	.30
Bright Stocks:	
8 color	.32
6½ plus color in dilution	.31½

NEUTRAL OIL

200-3 color	.31½
150-3 color	.27½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0245	.0250

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas*	$1 27
Van, Tex.†	1 10
Camp Hill, Tex.	1 27
Cass County, Tex.‡	1 25
Talco	73
Altus and Tipton, Okla.§	1 20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1 00
Garden Island, La.	1 37
Cleveland, Tex.	1 27
Hardin, Tex.	1 15
Tomball, Tex.	1 30
Lafitte, La.	1 24
Livingston, Tex.	1 27
Satsuma	1 20
Heyser, light (Nov. 1, 1936)	1 15
Heyser, heavy (Nov. 1, 1936)	90
Placedo (Nov. 1, 1936)	90
Welsh, La.	98
Tepetate (La.) (Jan. 4, 1937)	1 12

Greta, Refugio, O'Connor, McFadden, Saxet, Segno, Taft, Tomoconnor and Plymouth take same gravity prices as Gulf Coast, Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1 18
Iles, Colo., heavy*	1 12
Greybull, Wyo.*	1 30
Torchlight, Wyo.*	1 30
Grass Creek, Wyo., light.*†	1 30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	57
Elk Basin, Wyo., light*†	1 30
Frannie, Wyo., heavy*	62
Frannie, Wyo., light	82
Hogback, N. Mex.*	1 33
Pondera, Mont. (Jan. 26, 1936)*	1 05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1 23
Rock Creek, Wyo.†	1 20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. Mex.	90
Maljamar, N. Mex.	90
Canon City and Florence, Colo.	1 10
Florence, Colo.	98
Lance Creek, Wyo.	97
Sunburst, Mont. (June 5, 1936)	1 20
Cat Creek, Mont.	1 40
Cut Bank, Mont.	1 35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO.

(Effective January 28, 1937)

Lima	1 25
Illinois	1 35
Princeton, Ind.	1 35
Midland, Mich.	1 42
West Branch, Mich.	1 26
Buckeye (March 16, 1937)	1 39½
Arenac, Mich.	1 26
Muskegon, Mich.	1 00
Eastern Kentucky:	
Big Sandy River	1 42
Kentucky River	1 50
Western Kentucky	1 40

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp., effective January 29. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Southwest Texas

(January 28, 1937)

Pettus	1 37
Salt Flat, Darst Creek, Hilbig, Carroll Clark, Zoboroski	1 09
Luling	1 00
Lytton Springs	1 12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ 90
Tullos and Urania	1 02
El Dorado East field	90
Union County, Ark.	90
Ouachita County, Ark.	90

Eastern States

TIDE WATER PIPE LINE CO.

(Effective Feb. 24, 1937)

Bradford, Pa.	$2 67
Allegany, N. Y.	2 67

SOUTH PENN OIL CO.

(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2 67
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2 42
Pennsylvania Grade Oil in Eureka Pipe Line lines	2 37
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2 22
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1 32

PENNZOIL CO.

(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2 67
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2 66
Includes Tidioute district.	
Group C	2 65
Includes Turkey and Tidioute districts.	
Group D	2 64
Includes Bear Creek and Porkey districts.	
Group E	2 61
Includes Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.

(Effective Feb. 24, 1937)

Cabin Creek, W. Va.	2 37
Bradford Hollow, W. Va.	2 37
Kelly Creek, W. Va.	2 37

Canada

Ontario (Sept. 9, 1933)*	
Petrolia	$2 10
Oil Springs	2 17
Turner Valley, Alberta province (Dec. 16, 1936):†	
Clear naphtha	$2 60
Discolored naphtha, 65 gravity and higher	2 36
Discolored naphtha and crude oil, 40-40.9 gravity	1 55
Increasing 3 cents for each degree of gravity with top price for 64-64.9 gravity	2 27

These prices delivered field tankage.
*Imperial Oil, Ltd.
†Imperial Oil, Ltd., and Regal Oil & Refining Co. On crude oil alone British American Oil Co. posted above prices on December 9, 1936.

Mexico

Panuco*	$1 24

*In U. S. currency, f.o.b. ship, based on February spot market transactions.

Texas Wildcats

(Continued from Page 245)

mi. NE Hawley, sec. 37, T.&P. Sur., Blk. 15. Drlg. 1,890 ft.

Fain & McGaha Oil Corp. No. 1 J. H. Wheeler, 3 mi. NW Sandy Ridge pool, sec. 55, O.A.L. Sur. M.I.

R. B. Farris et al No. 1 Beasley heirs, 3 mi. S Nugent, W. T. Evans Sur. Drlg. 1,700 ft.

Golden Pet. Co. No. 1 Wooten, SE cor. county, 330 ft. from S, 150 ft. from W, SE¼ sec. 4, B.A.L. Sur. Machine.

S. C. Herring No. 1 Eleanor Haynes, sec. 191, S. Andrews Sur., NE edge Sayles pool. Drlg. 2,080 ft.

A. P. Kouri et al No. 1 Winkles, 2 mi. N Nugent, J. M. Polk Sur. A-495. Spdg.

Lewis Prod. Co. et al No. 2 Sayles, 240 ft. sec. 6, T.&P. Sur., Blk. 20, 1 mi. S Sayles pool. T.D. 1,963; U.R. 6⅝-in.

Luecders Dev. Co. No. 1 Underwood, 2 mi. S. Luecders, sec. 16, N. Scott, but in S. L. Underwood Sur. No. 1. L. 1,790 ft.; recmtg.

Peckham et al No. 1 Denton Co. Natl. Bank, NE cor. county, sec. 17, H.&T.C. Sur., Blk. 3. T.D. 1,172 ft.; fsg. tools.

Petroleum Producers Co. No. 1 H. C. Harvey, 3 mi. E Nugent, T.&P. Sur., Blk. 14. Drlg. 1,647 ft.

Riddle et al No. 1 J. D. Freeman, 8 mi. SW Anson, sec. 6, T.&P. Sur., Blk. 17. Drlg. 820 ft.

Palo Pinto County

D H. & C. Drlg. Corp. No. 1 Davenport, 6 mi. SE Palo Pinto, L. F. Margaret Sur. A-309. T.D. 2,000 ft.

Paul Garrett No. 1 Mabry heirs, NE cor. county, sec. 2,572, T.E.&L. Sur. S.D. 649 ft.

W. K. Gordon et al No. 2 Canty, 8 mi. W Palo Pinto, sec. 42, T.&P. Sur., Blk. 2. Top sd. 3,930 ft.; est. 250,000 ft. gas; set csg.

Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. Drlg. 125 ft.

Earnest Lloyd et al No. 1 Bailey, 3 mi. NE Graford, sec. 2,003, T.E.&L. Sur. Drlg. 900 ft.

Shackelford County

Koeser & Pendleton No. 1 Davis, sec. 1, T.&P. Sur., Blk. 13, 10 mi. W. Albany. Sd. 1,594-95 ft.; est. 4,000,000 ft. gas; S.D. 1,717 ft.

Ungren & Frazier et al No. 1 Snyder, 3 mi. SW Sedwick, sec. 26, L.A.L. Sur. Drlg. 3,760 ft.

Stephens County

W. T. Garret et al No. 1 Echols, 6 mi. SE of Ivan, W½, sec. 10, Blk. 3, S.P.R. R. Sur. Sand 3,865-73 ft.; tested 16,750,000 ft. gas; S.D. 3,880 ft.

Mudge Oil Co. No. 1 S. H. [illegible] mi. SW Eliasville, sec. 1,122, T.E.&L. Sur. U.R. 6⅝-in. 3,210 ft.; W.O.C.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. S.D.O. 2,140 ft.

Taylor County

Dunn & McAlister No. 1 Bowles, NE cor. county, SW¼ sec. 28, B.A.L. Sur. O.W.D.D.; sdv. L. 1,758-52 ft.; good S.O.&G.; C.O. 1,755 ft.

Fields, Finley & Cherry No. 1 Hinds, 1 mi. W Tye, 2,126 ft. from N. 330 ft. from E. Blk. 5, Jose Gabo Sur. No. 128. Drlg. 325 ft.

Golden Pet. Co. No. 1 C. B. Braune, sec. 15, League 144, Guadalupe Co. School Lands Sur. M.I.R.

Wm. Hix & Co. No. 1 A. H. Spencer, sec. 413, A. McBerth Sur., 5 mi. E Tuscola. Loc. for 4,500-ft. test.

Hal Hughes et al No. 1 Manahan, 5 mi. S Abilene, sec. 14, L.A.L. Sur. Drlg. 1,510 ft.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E Bridgeport, Jas. Couch Sur., Abst. 104. S.D. 2,165 ft.

Crude Prices by Gravities

	1 Oklahoma-Kansas	2 Oklahoma-Kansas	3 North and Central Texas	4 East Central Texas (Mexia district)	5 North Louisiana-Arkansas	6 Gray County, Texas	7 Hutchinson-Carson counties, Texas	8 Rodessa, Louisiana-Texas and Panola County, Texas	9 Conroe, Tomball, Raccoon Bend, Satsuma, Texas	10 Gulf Coast	11 Gulf Coast	12 West Texas except Pecos County, Lea County, N. Mex.	13 Mirando district, Texas	14 Marion County, Texas	15 Government Wells, Texas	16 Anahuac, Texas	17 White Castle, Louisiana	18 Iowa, Louisiana	19 Cayuga, Texas
Bel. 18										$ 90									
18-18.9										.92									
19-19.9										.94						$ .92	$ .94	$ .84	
20-20.9										.96	$ .95		$ .90		$ .90	.94	.96	.86	
21-21.9										.98	.98		.93		.93	.96	.98	.88	
22-22.9										1.01	1.01		.96		.96	.98	1.01	.91	
23-23.9										1.04	1.04		.99		.99	1.00	1.04	.94	
24-24.9										1.07	1.07		1.02		1.02	1.02	1.07	.97	
Bel. 25		$ .98			$ .90			$ .93						$ .90					$ .88
25-25.9		1.00			.92			.95		1.10	1.10	$ .78	1.05	.92		1.04	1.10	.99	.90
26-26.9		1.02			.94			.97		1.13	1.13	.80	1.08	.94		1.06	1.13	1.03	.92
27-27.9		1.04			.96			.99		1.15	1.15	.82	1.10	.96		1.08	1.15	1.05	.94
28-28.9		1.06			.98			1.01		1.17	1.17	.84	1.12	.98		1.10	1.17	1.07	.96
Bel. 29	$1.06		$ .96	$1.03					$1.20										
29-29.9	1.08	1.08	.98	1.05	1.00			1.03	1.22	1.19	1.19	.86	1.14	1.00		1.12	1.19	1.09	.98
30-30.9	1.10	1.10	1.00	1.07	1.02			1.05	1.24	1.21	1.21	.88	1.16	1.02		1.14	1.21	1.11	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04			1.07	1.26	1.23	1.23	.90	1.18	1.04		1.16	1.23	1.13	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06			1.09	1.28	1.25	1.25	.92	1.20	1.06		1.18	1.25	1.15	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08			1.11	1.30	1.27	1.27	.94	1.22	1.08		1.20	1.27	1.17	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10			1.13	1.32	1.29	1.29	.96	1.24	1.10		1.22	1.29	1.19	1.08
Bel. 35						$ .96	$ .91												
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34		1.31	.98	1.26	1.12		1.24		1.10	
36-36.9	1.22	1.22	1.12	1.19	1.13	1.00	.95	1.17	1.36		1.33	1.00	1.28	1.14		1.26			
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38		1.35	1.02	1.30	1.16		1.28			
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40		1.37	1.04	1.32	1.18		1.30			
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42		1.39	1.06	1.34	1.20		1.32			
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44		1.41	1.08	1.36	1.22		1.34			

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Dickey, Eason, El Dorado, Empire, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Crude Oil Purchasing Co.
Columns, 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—Humble Oil & Refining Co.
Column 14—Magnolia Petroleum Co.
Column 15—Sun Oil Co.
Column 16—Gulf Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1937 High	1937 Low	Week ended April 10 Sales	Week ended April 10 High	Week ended April 10 Low	Week ended April 10 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
114⅞	101	2,600	107	98¼	102	Amerada Corp.	788,675	N.P.	50cQ	1-30-37	$2.00	125½	75	80	48½
37	30⅛	15,900	34⅞	32¼	33	Atlantic Refining	2,664,904	$25	25cQ	3-15-37	1.25	35⅛	26⅝	28	20½
43⅜	35⅞	11,100	40	36½	37¾	Barber Co.	387,149	$10	50c	12-10-36	.50	38½	21	22½	11¾
35¼	26⅛	29,500	33⅞	30	31	Barnsdall Oil Co.	2,131,090	$5	25cQ	5-1-37	.80	28¼	14⅛	14¾	5⅞
20⅞	14½	56,300	15⅜	13⅞	14⅝	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-16-36	.40	23⅜	14	15¾	3⅜
17⅞	15⅝	85,300	17⅞	16¼	17	Consolidated Oil Corp.	13,983,287	N.P.	20cQ	5-15-37	.80	17¼	11½	12¼	6½
45¾	40¼	32,700	45¾	42½	45⅜	Continental Oil of Delaware	4,682,671	$5	25cQ	3-29-37	1.50	44⅞	28⅛	35	15⅛
17⅝	12½	22,900	15⅜	13⅜	13⅞	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	13⅞	6⅜	7	1½
35⅜	29¼	11,800	34¼	31½	32	Mid-Continent Petroleum	1,843,872	$10	75cSA	12-1-36	1.15	30⅞	17¼	20½	9½
34	26⅞	2,800	34	30	31	Mission Corporation	1,399,345	N.P.	....	.....	.45	29⅞	16¾	17¾	10⅜
95	62	6,800	95	83	93⅛	National Supply of Delaware	382,591	$25	....	5-15-31	....	75½	19⅞	20⅞	9
22⅞	17⅛	57,700	22⅞	20½	21¾	Ohio Oil Co.	6,563,377	N.P.	35cSA	12-15-36	.60	18	12⅛	14¼	9¼
29¾	22¼	13,700	29¾	27¼	28	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	23½	11¾	14	6¾
4½	2¾	2,000	3½	3¼	3¼	Panhandle P. & R.	198,770	N.P.	....	.....	....	4¼	1⅜	1⅞	½
59¼	49½	38,500	59¼	54¼	56¼	Phillips Petroleum	4,152,836	N.P.	50cQ	3-1-37	2.50	52⅝	38⅛	40	13⅜
28⅜	24¼	17,300	28⅜	25⅜	27⅜	Plymouth Oil Co.	1,050,000	$5	35cQ†	3-31-37	.90	27¾	11⅞	13	6½
24⅜	19½	55,800	21⅝	19⅝	20¾	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	24⅞	16	17	5⅞
54⅛	40¼	30,200	54⅛	48	49½	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	3-15-37	1.00	44	30½	36⅞	20¾
34¾	26⅞	10,200	33⅝	30½	31½	Shell Union Oil	13,070,625	N.P.	25c	12-15-36	.25	28¼	14⅜	16½	5½
105⅜	102	1,800	104	103	104	Shell Union Oil 5½% pfd.	400,000	$100	26⅛c	12-15-36	28.87½	127½	102	111	63⅛
4⅛	3⅛	3,200	4⅛	3⅞	4	Simms Petroleum	461,698	$10	50c liq.	1-9-37	2.25 liq.	6¾	3½	18¾	4¾
60	42	11,400	60	54⅜	57	Skelly Oil	1,008,514	$15	....	12-15-30	..	47⅜	19½	20½	6½
19¾	16¼	112,900	19¾	18⅜	18⅝	Socony-Vacuum	31,151,075	$15	25cSA	3-15-37	.70	17½	12½	15⅜	10⅝
50	43¼	23,400	48	44⅞	45⅝	Standard Oil of California	13,014,754	N.P.	30cQ†	3-15-37	1.20	47⅝	35	41⅛	27¾
50	44⅜	18,300	48	45¾	46½	Standard Oil (Indiana)	15,215,677	$25	40cQ†	3-15-37	2.40	48½	32¾	33⅜	23
32	31	100	31	31	31	Standard Oil of Kansas	200,000	$10	$1	12-26-36	1.00	31	25	32	20
76	67¾	38,800	73	68	69½	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-36	2.00	70⅜	51⅛	52⅜	35¾
71½	68	1,200	71½	68	71½	Sun Oil	1,733,013	N.P.	25cQ	3-15-37	$1 & 6% Stk.	91	70	77	60½
62⅜	50⅜	94,800	62⅜	58	60⅜	Texas Corp.	9,340,069	$25	50cQ	4-1-37	1.50	55¼	28⅞	30¼	16½
9⅝	7⅜	33,800	9⅜	8⅝	9	Texas Gulf Producing Co.	888,116	N.P.	5c	12-15-36	.05	8⅞	4⅜	4¾	2½
16⅝	13⅛	27,700	16½	15	15½	Texas Pacific Coal & Oil	880,703	$10	10c	3-1-37	.25	15¼	7½	9¼	3¼
21⅝	18⅞	20,900	20⅛	18¾	19	Tide Water Associated	5,642,342	N.P.	15cQ	3-1-37	.70	21⅜	14⅜	15⅞	7⅝
28¼	24⅛	18,100	26½	24½	26	Union Oil of California	4,666,270	$25	30cQ	5-10-37	1.00	28½	20¾	24	14¾
31½	26⅝	1,800	29¼	28¾	28¾	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-37	1.20	31⅝	22⅝	26½	20⅞
6¼	4½	9,200	5¾	5	5	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¼	2¾	3⅛	1

*Ex-dividend. †Includes extras.

New York Curb Exchange

1937 High	1937 Low	Week ended April 10 Sales	Week ended April 10 High	Week ended April 10 Low	Week ended April 10 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
21⅜	16	1,700	18¾	17¼	18	Bridgeport Machine Co.	260,000	N.P.	$1	12-21-36	$1.00	21	13¼	14⅛	3¾
51½	46	No sales	....	....	....	Buckeye Pipe Line Co.	200,000	$50	$1Q	3-15-37	3.25	50	39¾	42½	30½
2¾	1⅞	14,600	2¼	1⅞	2⅛	Carib Syndicate	799,020	25c	....	.....	..	4⅞	1⅞	4¼	1⅝
117	110¼	200	117½	116	117½	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-29-37	7.00	124¾	105	157	115
5⅜	4	63,200	4⅛	3⅞	4	Cities Service	37,804,394	N.P.	....	6-1-32	....	7⅜	3	3¼	⅜
4⅝	2¼	2,600	2½	2¼	2⅜	Cosden Oil	399,687	$1	....	.....	....	4½	1½	1½	¼
38	28½	12,900	32	29½	30½	Creole Petroleum	6,974,356	$5	25cSA	12-15-36	.50	39	19⅞	23¾	10
18⅝	15⅝	2,400	17⅛	15½	15¾	Darby Petroleum	351,390	$5	25cSA	1-15-37	.50	18⅛	9	8⅞	4
7⅞	5¼	6,800	7⅛	6½	7	Derby Oil & Refining	263,162	N.P.	....	.....	....	6¾	1⅞	2	¾
47½	37	No sales	....	....	....	Eureka Pipe Line	50,000	$50	$1Q	5-1-37	4.00	47½	38½	38	33¼
63½	53¾	10,300	59⅜	55¾	57½	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-37	1.50, 100% Stk.	59	36	74¾	50¼
87	77½	2,400	82¼	80⅛	82⅛	Humble Oil & Refining	8,923,935	N.P.	37½cQ	4-1-37	1.50	80	57	64	44
24¼	21	6,400	23¼	22⅜	22⅞	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-36	1.25	24½	19¾	22½	15⅜
15	7¾	1,500	14¼	13¼	13¾	Indiana Pipe Line	300,000	$10	30cSA	5-15-37	.80	9¾	5½	6⅛	3⅝
39½	33¾	6,400	36¾	35⅝	36⅜	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-36	2.50	39⅝	32⅝	39¾	28
15¼	12	14,900	12¾	11¾	12	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	3-15-37	.50	15⅜	9⅞	11⅜	4⅜
26¾	16⅛	27,300	26¾	24	25	Lion Oil Refining	270,000	N.P.	25cQ	12-26-36	.75	17¾	7⅜	8⅛	3½
14¼	10⅞	4,700	11	10⅜	10¾	Lone Star Gas	5,382,723	N.P.	20c	4-20-37	.60	14¼	9⅞	10⅞	4½
7⅞	6	3,000	6¾	6½	6⅝	Mountain Producers	1,682,182	$10	30cSA	12-21-36	.60	8⅜	5	5⅜	4⅛
19½	16	2,100	16¾	16½	16¾	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-37	1.00	23	17⅜	20	11¾
11⅞	10	500	10⅝	10⅜	10⅝	National Transit	509,000	$12.50	35cSA	12-15-36	.75	15¾	9¼	10⅝	6¾
6	4¾	200	5½	5½	5½	New Bradford Oil	1,445,202	$5	15cSA	4-15-37	.10	4⅝	2⅞	3¼	2
5	3	900	3⅛	3	3⅛	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	6⅝	1⅝	2½	1
5⅜	4½	500	4⅞	4¾	4⅞	New York Transit	100,000	$5	15cSA	10-15-36	.35	6¼	4¼	4⅞	3
10⅜	7½	1,300	10⅜	10¼	10⅜	Northern Pipe Line	120,000	$10	35c	1-2-37	.40	9¾	4⅞	8	5¼
9⅝	5½	34,300	7¼	6⅜	6½	Pantepec Oil	1,608,700	N.P.	....	.....	....	10⅛	3¼	4⅜	1¼
13¾	7⅝	7,400	8½	8	8⅛	Root Petroleum Co.	336,045	$1	25c	11-2-36	.50	19¼	4½	5	1½
6½	4	2,300	5⅛	4¾	5	Ryan Consolidated	296,931	N.P.	....	.....	....	4¾	1⅞	2½	⅝
48	43	1,200	44¼	42	42¾	South Penn Oil	1,200,000	$25	60cQ†	3-29-37	2.60	44	32½	34½	21⅝
7¼	5	No sales	....	....	....	Southern Pipe Line	100,000	$10	20cSA	3-1-37	.25	7⅞	3¼	5	3⅞
42	34	No sales	....	....	....	South West Penna. Pipe Lines	35,000	$50	50cQ	4-1-37	13.00	60	44	56	44¼
20¾	19⅛	3,400	20¾	19⅝	20	Standard Oil of Kentucky	2,604,790	$10	25cQ	3-15-37	1.35	23⅜	17⅛	24	18
13¾	11½	200	13⅝	13⅛	13⅛	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	14⅝	11	12	7¾
45	33¼	2,500	43	40½	40½	Standard Oil of Ohio	753,740	$25	25cQ	3-15-37	2.00	40	21¾	23⅝	11½
4⅞	4	14,000	4¾	4½	4½	Sunray Oil	1,910,919	$1	5c	4-26-37	.10	5	2⅝	2⅞	⅞
7⅝	6⅛	2,000	6⅝	6¼	6½	Texon Oil & Land	336,028	$2	15cQ	3-31-37	.60	9¾	5⅝	6⅞	5

*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Oil Man's Calendar

April

26-28—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting, Arlington Hotel.

May

4-9—White Sulphur Springs, W. Va., Society of Automotive Engineers, summer meeting, Greenbrier Hotel.

6-7—Columbus, Ohio, American Petroleum Institute, Division of Production, Eastern district, Deshler-Wallick Hotel.

10—Kansas City, Mo., Spring meeting Natural Gas Department, American Gas Association.

19-21—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

23-27—Pittsburgh, Pa., National Association of Purchasing Agents (Oil Company Buyers' Group) annual convention, William Penn Hotel.

June

1-3—Colorado Springs, Colo., American Petroleum Institute, mid-year meeting, Broadmoor Hotel.

7—Kansas City, Mo., Oil Field, Gas Well-Refinery Workers of America.

10-12—Pennsylvania Grade Crude Oil Association, annual meeting, on Great Lakes S.S. "Seeandbee," sailing from Buffalo, N. Y.

11—Santa Fe, N. M., Interstate Oil Compact Commission meeting.

14-19—Paris, France, Second World Petroleum Congress, during International Exposition.

25-26—Dallas, Tex., National Oil Scouts Association, annual meeting, Baker Hotel.

June—July

28-July 2—New York, American Society for Testing Materials, fortieth annual meeting, Waldorf-Astoria Hotel, together with fourth A.S.T.M. exhibit of testing apparatus and related equipment.

September

(?)—San Francisco, Calif., North American Gasoline Tax Conference.

27—Cleveland, Ohio, American Gas Association, nineteenth annual convention.

October

11-16—Houston, Tex., Oil-World Exposition.

26—New York, Oil Trades Association of New York.

29-30—Dallas, Tex., Mid-Continent Oil and Gas Association of Texas, annual meeting.

November

9-12—Chicago, American Petroleum Institute, eighteenth annual meeting, Stevens Hotel.

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Oil Industry Printing

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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PIPE Yard at Lyons, Kansas. 15½" and 12¾" BIGNALL KEELER PIPE MACHINES. LATHES. Cheap long lease. Write Mid-Continent Pipe & Supply Co., Oklahoma City, Oklahoma.

FOR SALE: 75—10" Standard cast iron gasket type flange unions, new and reconditioned—cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE, very reasonable in place as is, STEEL RIVETED STORAGE OIL TANKS, good condition, various sizes, 6,000 to 260,000 gallon, eleven in all, in recent use by large oil company in Louisville. Write E. K. ROBERTSON, STANDARD SANITARY MFG. CO., 1541 South Seventh Street, Louisville, Kentucky.

The Classified Section of The Oil and Gas Journal, for over 30 years the market place of the oil industry.

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Classified Department

THE OIL AND GAS JOURNAL

FOR SALE: 15—3' x 15' National Tank Company sand hogs—cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: 6 class C-10 Sullivan pump heads with 15' stroke used in Oklahoma City operations. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: A large stock of 7" OD McEvoy hand operated blowout preventers. I. T. I. O. Company, Bartlesville, Oklahoma.

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26 West 2nd St. Cincinnati, Ohio

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FOR SALE: Two 240 H.P., 180 R.P.M., 3 cylinder Busch-Sulzer Diesel engines in first-class condition with one 187 KW., 240 V., A.C. belt driven generator and direct connected exciter. These engines are now connected together in tandem but could be separated to operate as single units. Will sell either or both units. Price $12.50 per H.P. F.O.B. our plant. STANDARD-TILTON MILLING COMPANY, Dallas, Texas.

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WANT TO BUY a 5 x 10 used Denver-Gardner mud pump. WANT TO SELL 1,000 feet of good used "N" Rod, $1.00 per foot.
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WANTED—200 bbl. or more, STEEL TANKS capable of withstanding 100 lbs. steam pressure. Address Box H-733, The Oil and Gas Journal, Tulsa, Oklahoma.

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Leases—Production

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Specializing leases twenty acres up dollar acre, East Tex., La., S. Ark. Owners—Attorney. Box 1122, Little Rock, Ark.

OWNER 650 acre dome, 13 miles west Craig, Colo., want development. Joe Lyall, 210 E. Queen St., Inglewood, California.

WANTED — Shallow production North and West Texas—also proven leases. Give description, potential acre yield, and cash price. "Petroleros," P. O. Box 383, Dallas, Texas.

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C. McMANUS
1308 So. Hill, Los Angeles, Calif.

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THE OIL AND GAS JOURNAL
TULSA, OKLAHOMA

Leases—Production

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WANTED, SHALLOW OIL
drilling blocks Eastern Kansas for development. Must be reasonable and have good geology. Write fully.
Box 2480
Kansas City, Missouri

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NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

WANTED: Stripper oil production or wells or leases that are ready for salvage. Address Box H-724, The Oil and Gas Journal, Tulsa, Oklahoma.

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NEW MEXICO, Chaves County, 1000 acre solid lease block. 9 years, 5c rentals, price 30c per acre. Roy G. Barton, Box 191, Clovis, New Mexico.

Partner wanted with car and some expense money only, experience not required. Four blocks being now assembled Western Kansas, good geology, big demand by operators, unusual opportunity. Address
Box H-745
The Oil and Gas Journal
Tulsa, Oklahoma.

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Porosity-Permeability-Saturation Tests.

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In their over-size stems, deep stuffing boxes and heavy carbon molybdenum walls these latest design Walworth Series 150 and 300 Steel Gate Valves give visible evidence of strength and stamina. They are tough . . . wear resistant . . . and dependable. They have streamline ports for better flow. They are new in every detail—the latest word in valve design.

These valves give added emphasis to Walworth's policy of providing the correct valve for any and every specific purpose. They are worthy companions of the complete line of valves and fittings which Walworth builds. Write for descriptive bulletin.

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WITH "CATERPILLAR" DIESEL POWER CABLE OR ROTARY TOOLS

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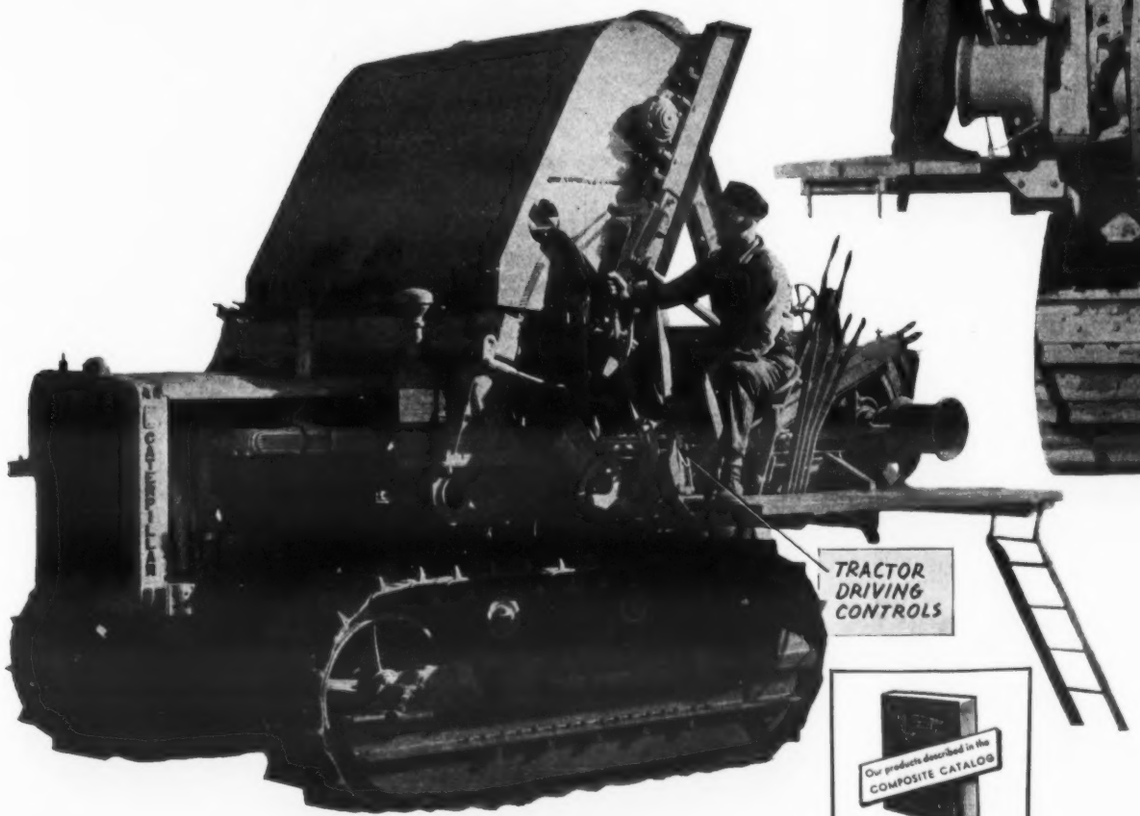
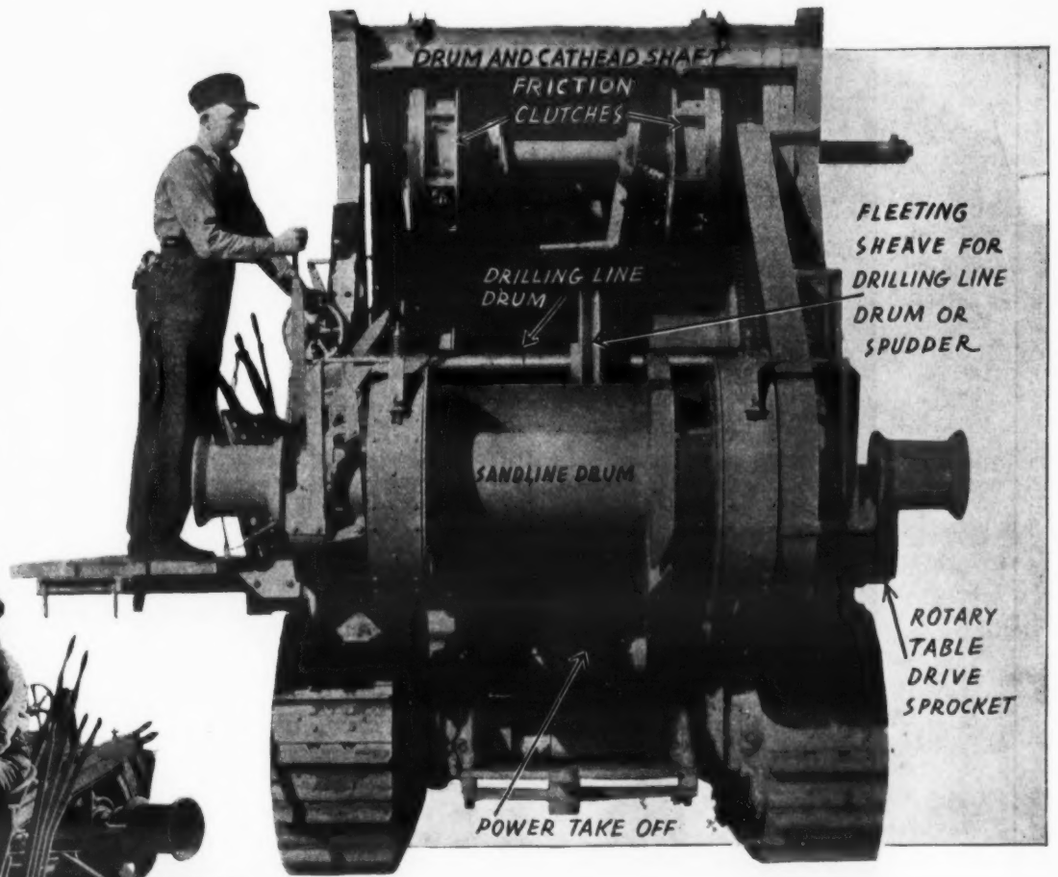
ROTARY TOOLS	1500 FT.	2500 FT.	4000
CABLE TOOLS	2500 FT.	4000 FT.	5000
WELL SERVICING	3000 FT.	5000 FT.	7000
TRACTOR	RD6	RD7	RD8

Balanced Design—Rugged Construction—Heavy Duty Anti-Friction Bearings, and Heat Treated Wearing Parts Throughout.

Friction Clutch Control of Both Drums and Cathead Shaft, also Jaw Clutches in Drums for Free Spinning.




DRUM AND CATHEAD SHAFT FRICTION CLUTCHES
DRILLING LINE DRUM
FLEETING SHEAVE FOR DRILLING LINE DRUM OR SPUDDER
SANDLINE DRUM
ROTARY TABLE DRIVE SPROCKET
POWER TAKE OFF

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1937 ISSUE

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REG. U. S. TRADE MARK PAT. OFFICE
THIS TRADE MARK INSURES HIGHEST QUALITY AT LOWEST PRICE

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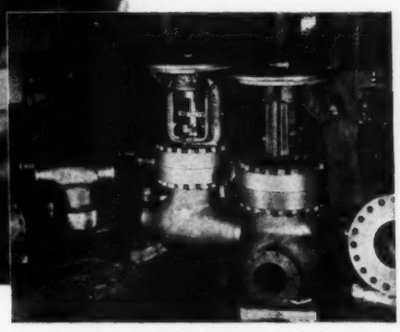
PRIDE IN HIS WORK

Edward workmen put the best they have into every Edward valve, be it big or little



ASK an Edward assembler whether Edward valves are good! He'll tell you. When he stamps his symbol on a valve, he knows it has qualities — plus values in every detail — other valves don't have. He has pride in his work because he is proud of the Edward name — a name associated with brilliant performance ever since the earliest use of high pressures.

And remember — today's Edward valves get by on no worn-out reputation. By gruelling tests, intensive field study and technical research, they are being built ever better. Find out about them!

• • •

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EAST CHICAGO INDIANA

EDWARD VALVES

Streams of Cut Oil

Top—Streams cut oil, Eldorado field, 1917.

Bottom—Cut oil, Eldorado, Kans., oil field, 1917.

•

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"Our pipe is going astray, Lad—getting too palsy with this electrolysis gang."

"Use 'Fleetweld.' Pop! Spare this rod and you spoil the pipe."

"I'm glad you mentioned your trouble, Pop. Really, there's no reason for letting your pipe go to the dogs because of electrolysis or corrosion.—Not when you can overhaul it by these simple plans.

"Plan one: Remove the pitted pipe. Clean its surface so that the pits can be detected. Fill up those defects by means of a *'Shield-Arc'* welder, using 'Fleetweld' mild steel electrodes. Test the pipe under air pressure with soap suds to make sure you've caught every leak. The reclaimed pipe is practically as good as new.

"You can recondition pipe this *'Shield-Arc'* way without preheating, saving more than 75% of the cost of new pipe.

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Pitted lines are often reclaimed by "Shield-Arc" *welding with pumping pressure "on."*

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Here's why "valve-wise" engineers

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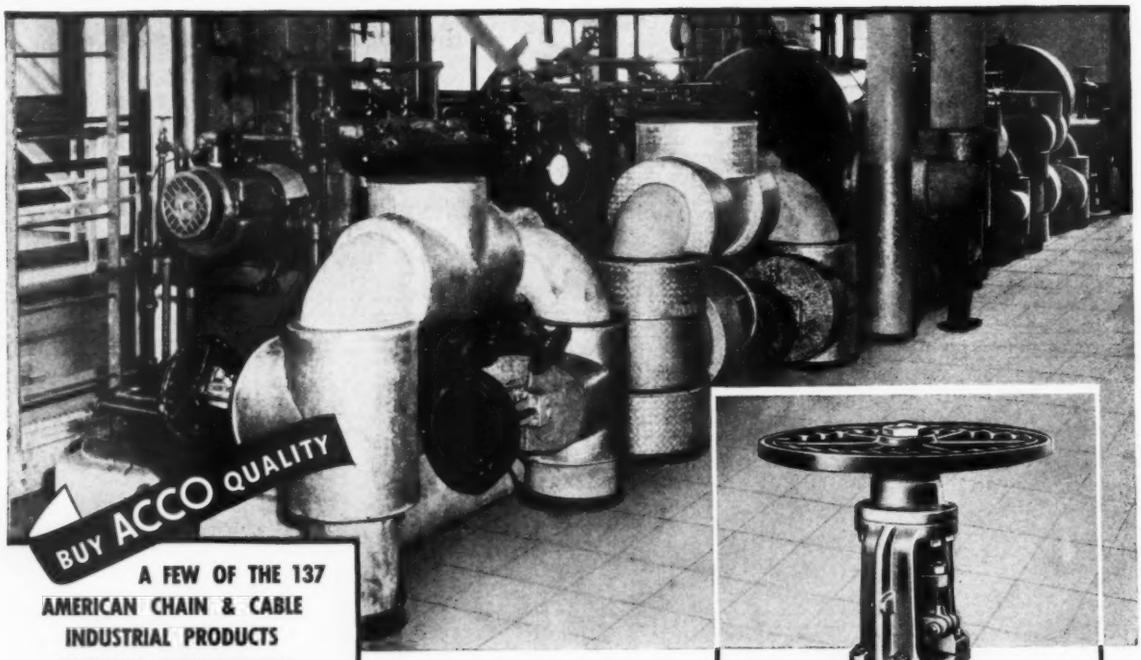

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● No engineer wants to compromise on valves for high pressure lines . . . he knows he is inviting a penalty either in operation, maintenance or service life. That's why, if he is "valve-wise," he specifies Reading Steel Valves.

Reading Steel Valves are made of carbon steel or any variety of alloy steels, with trim materials selected for best service under the conditions which will be encountered. Years of experience and research dictate the design and construction of Reading Steel Valves . . . design that provides greatest natural strength and even expansion and contraction throughout the range of temperature changes . . . unusually accurate machining that facilitates erection and reduces line stresses. There's a Reading Steel Valve that will meet any specific requirement whether for steam plant, refinery, pipe line or other class of service.

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AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT, CONNECTICUT

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OIL MEN

WHO WATCH THEIR HAULING COSTS SAY:

"FORD ENGINE AND PARTS EXCHANGE PLAN CUTS MAINTENANCE EXPENSE"

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Carburetor Assemblies	Distributor Assemblies
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Generator Assemblies	Clutch Disc Assemblies
Generator Armatures	Brake Shoe Assemblies

Shock Absorbers for Commercial Cars Only

Low gas and oil costs are only a part of Ford V-8 Truck and Commercial Car economy. Maintenance expense is also low because sound design, quality materials and precision manufacture make trips to the repair shop few and far between.

When parts replacements do become necessary, the cost is small. For example, after tens of thousands of miles of service the V-8 engine can be exchanged for a factory-reconditioned engine at a cost much lower than an ordinary engine overhaul. This exchange can be made in just a few hours, reducing the idle time of the unit. This plan restores original performance and greatly lengthens the useful life of the entire vehicle. In addition to the engine, many other factory-reconditioned parts are available at low cost.

Before you buy any new truck this year, ask your Ford dealer for details about this money-saving plan. Set a date for an "on-the-job" test of a Ford V-8 Truck or Commercial Car under your own operating conditions.

Ford

Convenient, economical terms through the Authorized Ford Finance Plans of the Universal Credit Company

FORD V-8 TRUCKS *and commercial cars*

Come out of the DOG HOUSE!

WHY buck the demand for better oils—*Emblem Pennsylvania Oils!* It's a waste of time and effort. Keeps you in the dog house when it comes to attracting the real money-spending trade.

The swing is to Emblem Pennsylvania Oils today. Steadily and consistently the high quality of these oils, plus the *national advertising* of this Association wins more and more permanent customers to the Pennsylvania Emblem.

But that's only half the story! Dealer or Jobber, you can't afford to pass up the *protection* the Emblem gives you. It helps to guarantee your profits — helps to build your business on a solid foundation.

Come out of the dog house! It will pay you. For details see an Association field man or write headquarters.

Pennsylvania Grade Crude Oil Association, Oil City, Pennsylvania

MEMBER OF PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION
Guaranteed 100% PURE PENNSYLVANIA OIL
PERMIT NUMBER .....
Made from the highest grade crude oil in the world

Better Oils from the **GROUND UP!**

FREE! *A new book of vital importance to you. The full story of our association and our emblem. This book available to members for distribution, with member's imprint, at exceptionally low cost. Write us for particulars.*

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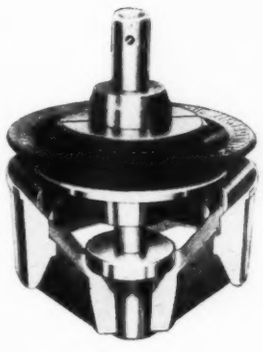
The STANDARD OF MISSION QUALITY MUST BE MAINTAINED.

Picture shows Chief Inspector making final inspection of Mission Valve Seats just before they go to the Shipping Department



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MISSION MANUFACTURING CO.

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Mission Slips . . . Mission Valves . . . Mission Pistons . . . Mission Piston Rods . . . Mission Swabs

Sold through supply stores everywhere

TOUGH!

... THEY STAY TOUGH...

...against HEAT

● You know what a tough job it is for metals to stand up under the temperature variations in your work. What you may not know is the rapid strides the modern cast steels have made to keep ahead of your needs.

To resist combined high temperatures and pressures in the vapor channel shown here, the Beaumont Iron Works recently adopted a Cast Nickel Steel. The addition of Nickel, with chromium and molybdenum to steel gives properties in excess of the minimum requirements shown in the following table:

Mechanical Properties

	Specification Min.	*Actual Results*
Yield Point, p.s.i.	65,000	78,500
Tensile strength, p.s.i.	100,000	104,700
Elongation in 2", %..	18	20.5
Reduction of Area, %	30	45.5
Bend Test (°)	75	98

CAST NICKEL STEELS

...against COLD

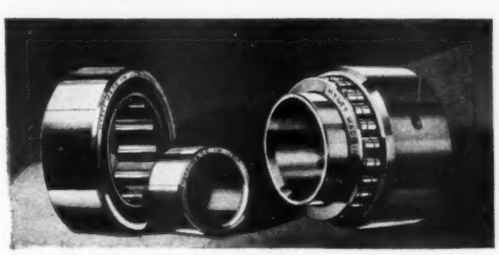
● Coming down to extreme cold, we find Cast Nickel Steels used in eliminating failures due to low temperature embrittlement. Worthington Pump and Machinery Corp., employs low-carbon cast steels with 2½% to 3% Nickel made by Lebanon Steel Foundry, Lebanon, Penna. for oil pump and chilling machine parts used in oil refinery service where the temperature is as low as −75° F.

Toughness at low temperatures? They tested these castings at −75° F. The Charpy impact values were consistently between 15 and 25 foot/pounds. In addition to low temperature toughness, these Cast Nickel Steels possess excellent strength and elastic properties.

Consultation on problems involving the production, treatment or application of Nickel alloys is invited.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

HYATT
ROLLER BEARINGS



TODAY'S insistent demand for dependability in modern oil field equipment is capably met by the indisputable advantages of fine workmanship and fine materials that identify every Hyatt Roller Bearing.

Built of the strongest bearing steel it is possible to procure . . . machined to microscopic tolerances which bring precision to the highest possible degree . . . every Hyatt has the exceptional ability to assimilate the gruelling punishment imposed by heavy loads and high speeds, while maintaining a constant and correct alignment of related parts.

Used in rotaries, draw-works, swivels, blocks, pumps, and other vital applications, Hyatts offer almost limitless possibility for economy in design and operation. Hyatt Bearings Division, General Motors Corporation, Newark, Detroit, San Francisco. Hyatt Roller Bearing Sales Company, Chicago and Pittsburgh.

*SILMO

steel refinery tubes

For Economical Oxidation Resistance

It is no longer necessary to use expensive high chromium alloy tubes for severe cases of oxidation in cracking stills, heat exchangers or condensers.

Oxidation resistance comparable with that of 4-6% chromium ½% molybdenum tubes can now be secured with *SILMO Tubes at considerably lower cost.

You can save with *SILMO Tubes wherever you have an oxidation condition that does not call for very high creep resistance and where, therefore, the use of *TIMKEN DM Tubes would not be justified.

Write for further information describing your oxidation condition and mentioning the kind of tubes you are using now. Timken high temperature tube specialists are familiar with every phase of refinery tube service. It will pay you to put your problems up to them.

One of the new Union Pacific Streamliners operating on TIMKEN Bearings.

TIMKEN STEEL AND TUBE DIVISION

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; and Timken Rock Bits.

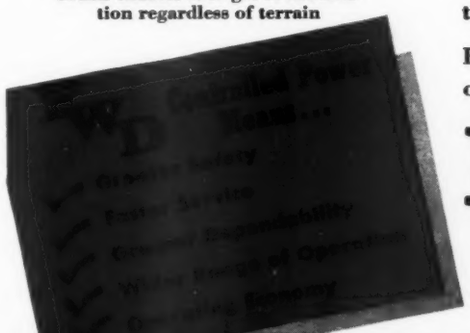
*TRADE MARK REG. U. S. PAT. OFF

TIMKEN

SEAMLESS STEEL TUBES

of the FWD assures *Positive Traction* Regardless of Road Conditions

Sure-footed traction of the FWD Truck enables it to get to the location regardless of terrain



There are numerous advantages embodied in the FWD Truck . . . But they are all summed in *Controlled Power* . . . The rugged construction of the FWD . . . its reserve power and its principle of four-wheel-drive give it *positive traction* with safety at high speeds under all road and weather conditions.

Dividing the load and power over the four driving wheels, as accomplished by the FWD, gives the driver more control over the truck . . . FWD Trucks "make" the hills faster and go into and out of the curves at higher speeds . . . with their powerful engines, wide range of gear ratios, and four-wheel-traction, they cut down trip time.

FWD Trucks are safe, fast, dependable, and economical to operate . . . Write for full details of FWD Controlled Power.

THE FOUR WHEEL DRIVE AUTO CO.
CLINTONVILLE, WISCONSIN
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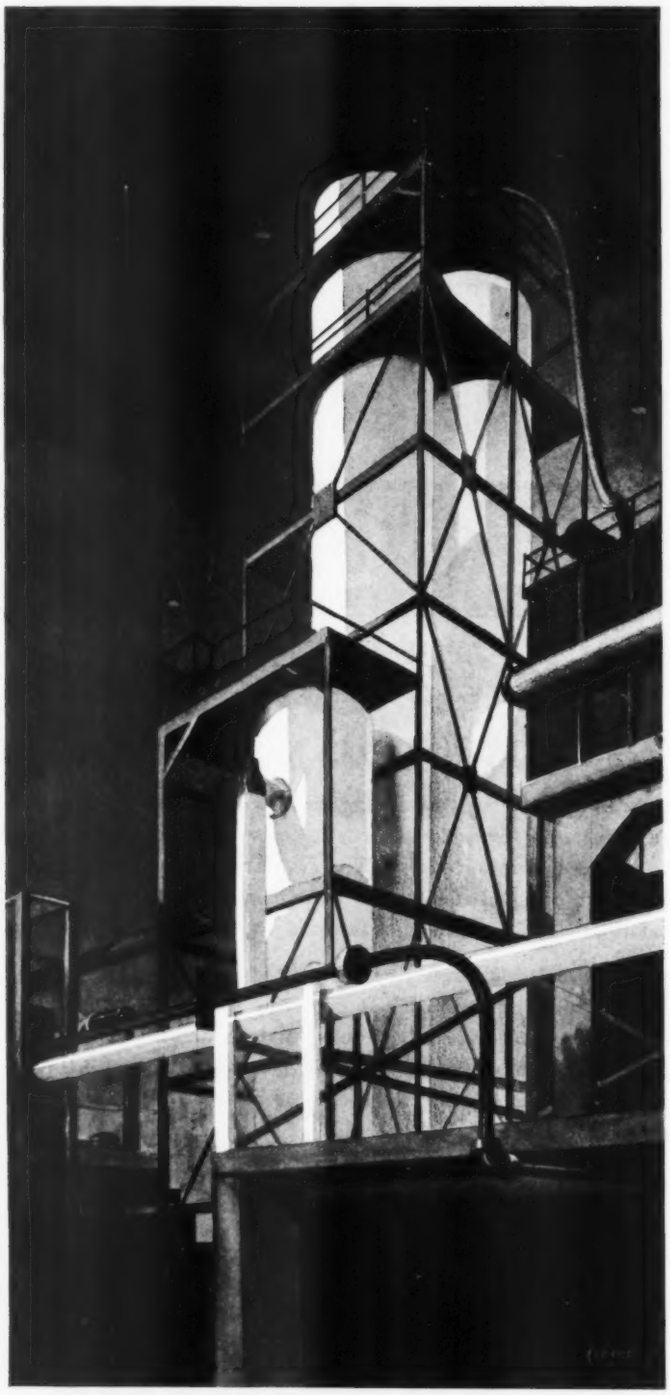
FWD FOUR-WHEEL-DRIVE TRUCKS

THE SAFEST TRUCK ON THE HIGHWAY

THERMAL



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Where by-product gases from cracking equipment or natural gas plants are available a Thermal Polymerization Unit may be adapted to individual plant conditions to convert saturated and unsaturated hydrocarbons into a superior blending gasoline.

In plants where Thermal Polymerization Units are operating the increased recovery of valuable motor fuels from by-products is reflected in the operating profits.

Refiners and natural gasoline operators are invited to investigate the possibilities of Thermal Polymerization through this organization or its agent, The M. W. Kellogg Company.

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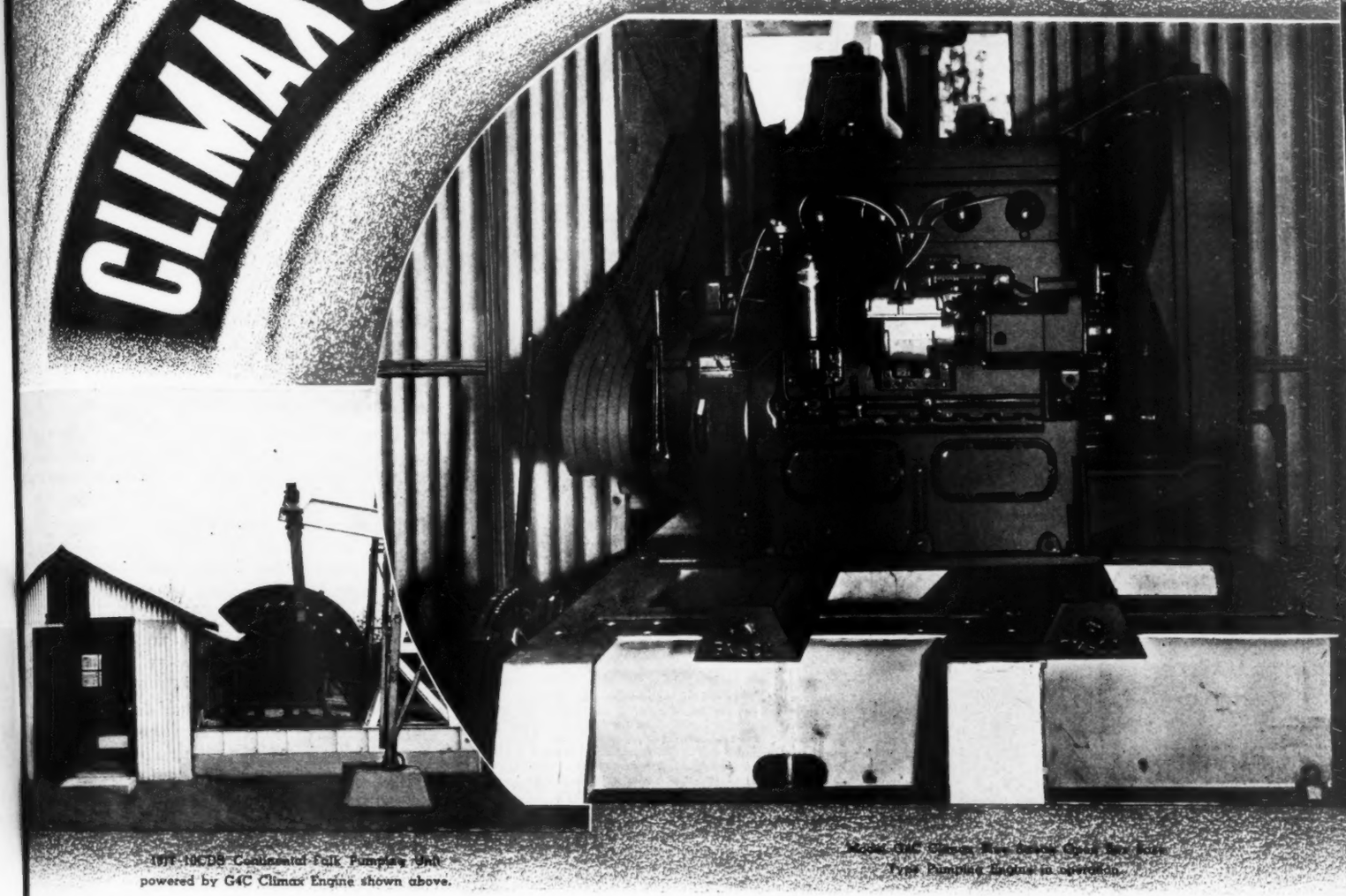
POLYMERIZATION

CLIMAX Blue Streak ENGINES



1931-10CDB Continental Falk Pumping Unit powered by G4C Climax Engine shown above.

Model G4C Climax Blue Streak Open Box Base Type Pumping Engine in operation.

Blue Streak is Showing the Way to Lower Lifting Costs

The Open Type Model G4C Climax Pumping Unit with Box Base embodies the best in engine design for meeting the increasing demands of oil field service.

Adaptable for use with natural gas, gasoline, butane, distillate or kerosene fuel, with a size range from 20 to 200 h.p.—there's a Climax for any pumping job.

Complete in every detail—oil filter and oil bath type air cleaner insure proper lubrication at all times. Special safety devices automatically stop the engine in case of water or lubricating oil failure.

More and more Climax *Blue Streak* Engines are taking the place of other types of pumping engines in every field. Adequate stocks of Engine Units and repair parts are maintained at convenient Continental store points throughout the Mid-Continent.

●

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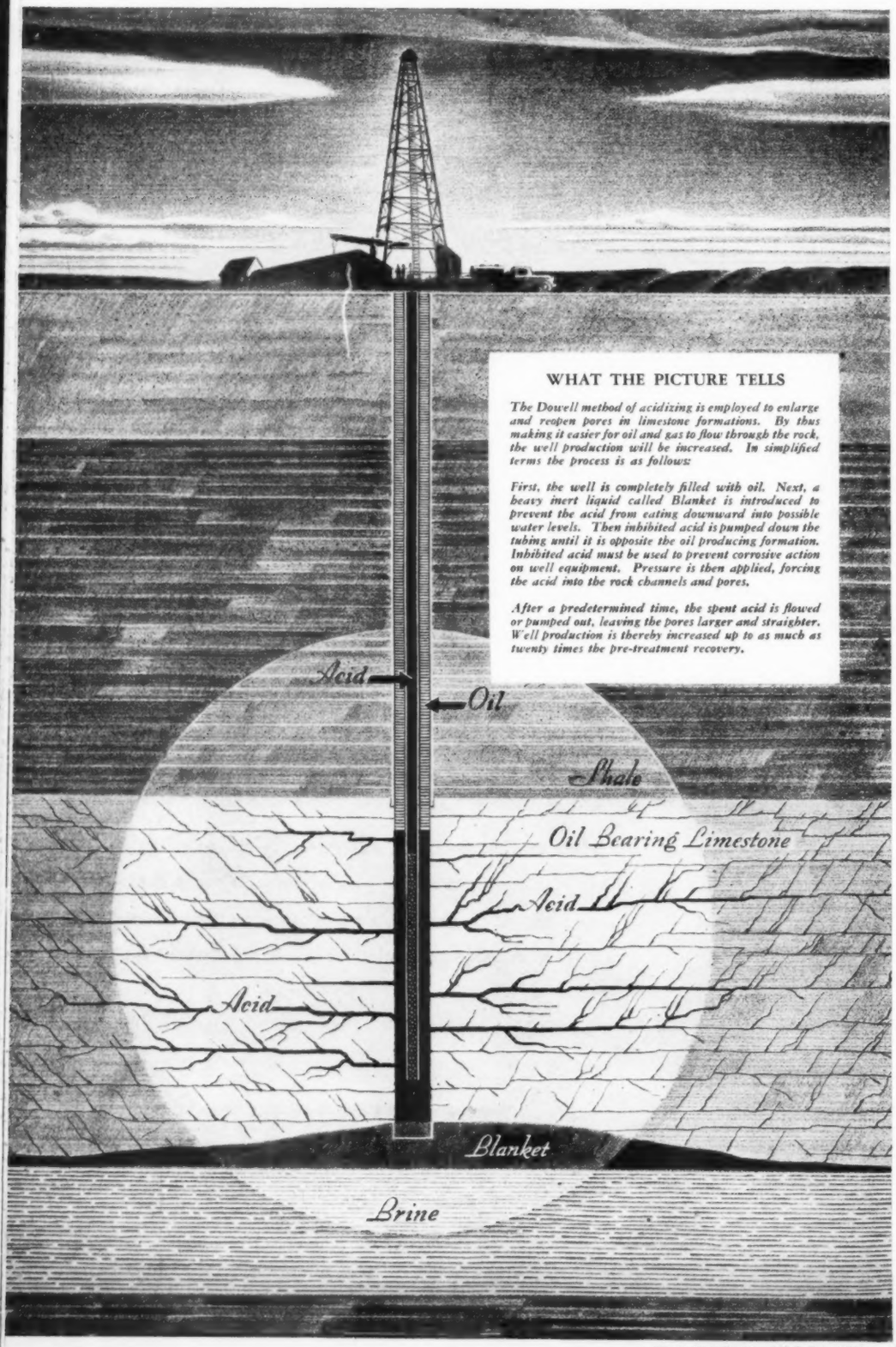
"Serving the Oil and Gas Industries"

CONTINENTAL

VITALIZING OIL WELLS VIA *Chemistry*



WHAT THE PICTURE TELLS

The Dowell method of acidizing is employed to enlarge and reopen pores in limestone formations. By thus making it easier for oil and gas to flow through the rock, the well production will be increased. In simplified terms the process is as follows:

First, the well is completely filled with oil. Next, a heavy inert liquid called Blanket is introduced to prevent the acid from eating downward into possible water levels. Then inhibited acid is pumped down the tubing until it is opposite the oil producing formation. Inhibited acid must be used to prevent corrosive action on well equipment. Pressure is then applied, forcing the acid into the rock channels and pores.

After a predetermined time, the spent acid is flowed or pumped out, leaving the pores larger and straighter. Well production is thereby increased up to as much as twenty times the pre-treatment recovery.

SO VITAL is petroleum in our highly mechanistic age, that it might be said a nation's Sword of Damocles is no longer suspended by a thread but by a drop of oil.

Since the days of Colonel Drake who gave America its first commercial oil well in 1859, the discovery and production of petroleum has constituted one of the most vivid chapters in our national development.

Billions of barrels have flowed from the earth's depths in close to one-half of our states—and there is little question that this abundant resource has literally oiled the wheels of American progress.

But, despite our apparently bountiful supply, both known and yet to be discovered, the need for more efficient and conservative production of petroleum has been long regarded as essential.

A sizable stride in this direction was taken when five years ago, Dow brought to the oil-producing industry through its subsidiary, Dowell Incorporated, a specialized chemical service for oil wells.

Whereas formerly, through natural and mechanical means, oil producers extracted approximately twenty per cent of the potential petroleum accumulation, by putting chemistry to work they stepped recovery up to double and even triple this amount.

Stripped of technicalities, Dowell undertakes through special acids and chemicals to overcome natural barriers to greater oil production in areas where oil is produced from limestone or dolomitic formations.

To render this service, Dowell maintains headquarters at Tulsa, Oklahoma, and a complete field organization located in the principal oil fields.

To date, it has treated over 9,000 wells, resulting in approximately $50,000,000 gain to the oil industry. In servicing these wells, Dowell trucks and cars have traveled 4,500,000 miles and its treating engineers have handled millions of gallons of special chemicals.

DOWELL INCORPORATED · *Subsidiary of THE DOW CHEMICAL COMPANY* · *Executive Office:* MIDLAND, MICHIGAN · *General Office:* KENNEDY BUILDING, TULSA, OKLAHOMA · *IN MEXICO* . . . DOWELL SOCIEDAD ANONIMA, Apartado 2424, Mexico, D. F. Mexico · Tampico, Tamaulipas, Mexico

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